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ABSTRACT

This report describes the Tucson Early Education Psychological Services (TEEPS) program during its third year of operation. TEEPS is based on the position that the quality of psychological services in the public schools can be increased by establishing educational systems in which the functions of psychology in education are embodied in system components rather than in individual practitioners. Activities in TEEPS during the past year have focused on two major areas: (1) the development of a set of evaluation procedures for assessing the overall effectiveness, acceptance, implementation, and efficiency of the program; and (2) a continued effort to refine and broaden the extent of the consultation process. In the consultation process, information is transmitted from the Arizona center through a staff of field representatives to program assistants, parent coordinators, and school psychologists. Through the same channels, feedback is reported to the center and used to provide guidance for future research and development activities. Also in this report are the TEEPS plans for the coming year, which include the projected development of a Computer-Based Information System for use in early childhood education. (CS)

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TUCSON EARLY EDUCATION
PSYCHOLOGICAL SERVICES

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through the Arizona Center for Early Childhood Education (as of July 1, 1972 designated as the Arizona Center for Educational Research and Development under the direction of Dr. Marsden B. Stokes)** Contractors undertaking such work under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the work. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

** Throughout this report the former designation will be referred to since the evaluation covers that period of time prior to July 1, 1972.

TUCSON EARLY EDUCATION
PSYCHOLOGICAL SERVICES PROGRAM

This report describes the Tucson Early Education Psychological Services (TEEPS) program during its third year of operation. The first year was a pilot year during which services were implemented as part of the Follow Through program in three school systems: Fort Worth Independent School District, Vermillion Parish School Board, and Walker County Department of Education. During the second year services were expanded to include an additional eight communities: Chickasha Public Schools, Choctaw Community Action Agency, Hoonah Public Schools, Lincoln Public Schools, Santa Fe Public Schools, Vincennes Community Action Corporation, Wichita Public Schools, and Ochoa School, Tucson District #1. For the third year (1971-72) one community, Choctaw Community Action Agency, withdrew from psychological services while three new communities were added: Baltimore City Public Schools, Durham County School District and Los Angeles County Schools. Thus, a total of thirteen communities were involved during the past year in implementing TEEPS programs.

A SYSTEMS APPROACH

TEEPS is based on the position that the quality of psychological services in the public schools can be increased by establishing educational systems in which the functions of psychology in education are embodied in system components rather than in individual practitioners. The reasoning underlying this position has been set forth by Bergan (1970) as follows:

"The central task associated with the rendering of psychological services in school settings is that of bringing relevant knowledge and techniques from the field of psychology to bear on the process of educating children. The basic approach which has been used to accomplish this task in the past, has been for established professionals to specify in broad terms the kinds of knowledge and techniques which should be made available to the schools and then to train and certify various types of personnel to apply such techniques and knowledge in school settings. In this approach the basic vehicle for providing interaction between psychology and education in the schools is the individual practitioner who has been trained and certified. Psychology, as it is communicated in the school, is in a sense embodied in the practitioner. The knowledge and skills which practitioners possess in large measure define what psychology is for the school.

A serious difficulty associated with the approach of embodying psychology within the individual practitioner is that psychology presently encompasses more relevant techniques than the individual practitioner can be expected to absorb. Furthermore, there is every reason to suspect that the fund of knowledge in psychology will increase at an enormous rate in the forseeable future.

One approach to the problem of knowledge and skill requirements has been to advocate high levels of training for school psychologists.

The inadequacy of this approach is attested to by the long-standing discrepancy between the level of training that many professionals have felt would provide the most effective services to schools and the level of training which has been attained by personnel operating in the field.

A second approach to the knowledge and skill problem has been to establish sub-specialties related to the field of psychology. The proponents of sub-specialties advocate the division of services related to psychology into categories and the establishment of separate sub-specialities for each category. This procedure has produced a proliferation of roles which has created countless problems in the psychological services field. Over the years, roles have been added piecemeal to existing services. New roles have often overlapped with old ones. The result has been an inordinate concern with problems associated with role definition and with stepping across role boundaries. In addition, it has failed to maximize the extent to which existing knowledge and techniques in psychology are used appropriately in the educational process, and it has failed to maximize the responsiveness of the practitioner to changes and developments in his field.

The TEEPS system packages knowledge and skills in system components rather than mainly in individual practitioners. This packaging provides to the schools, both higher levels of training and more diversity of training than

> typically have been available in psychological services in the past. In addition, the system provides communication channels among components designed to make the individual practitioner responsive to new developments in his field and to make significant problems encountered in the field influence the course of future training and research."

THE ARIZONA SYSTEM OF EDUCATIONAL SERVICES

The TEEPS program is one of three divisions of the Tucson Early Education Model. The other two divisions are an instructional program and a parent involvement program. The Tucson Early Education Model is implemented through an educational system involving two components: a research and evaluation component and a training and dissemination component.

Dissemination operations of the Arizona system are as follows: Information related to the implemenation of the Tucson Model and/or to the evaluation of the Model through research and development activities is transmitted from the Arizona Center through a staff of field representatives. The principal receivers of Center information in field settings are program assistants for the instructional program, parent coordinators, and in the case of psychological services, school psychologists. These three types of recipients transmit information to parents and instructional personnel who deal directly with children. Communication in the system is two way. Information is transmitted from the field to the Center as well as from the Center to the field. Incoming information to the Center is used to provide guidance for future research and development activities.

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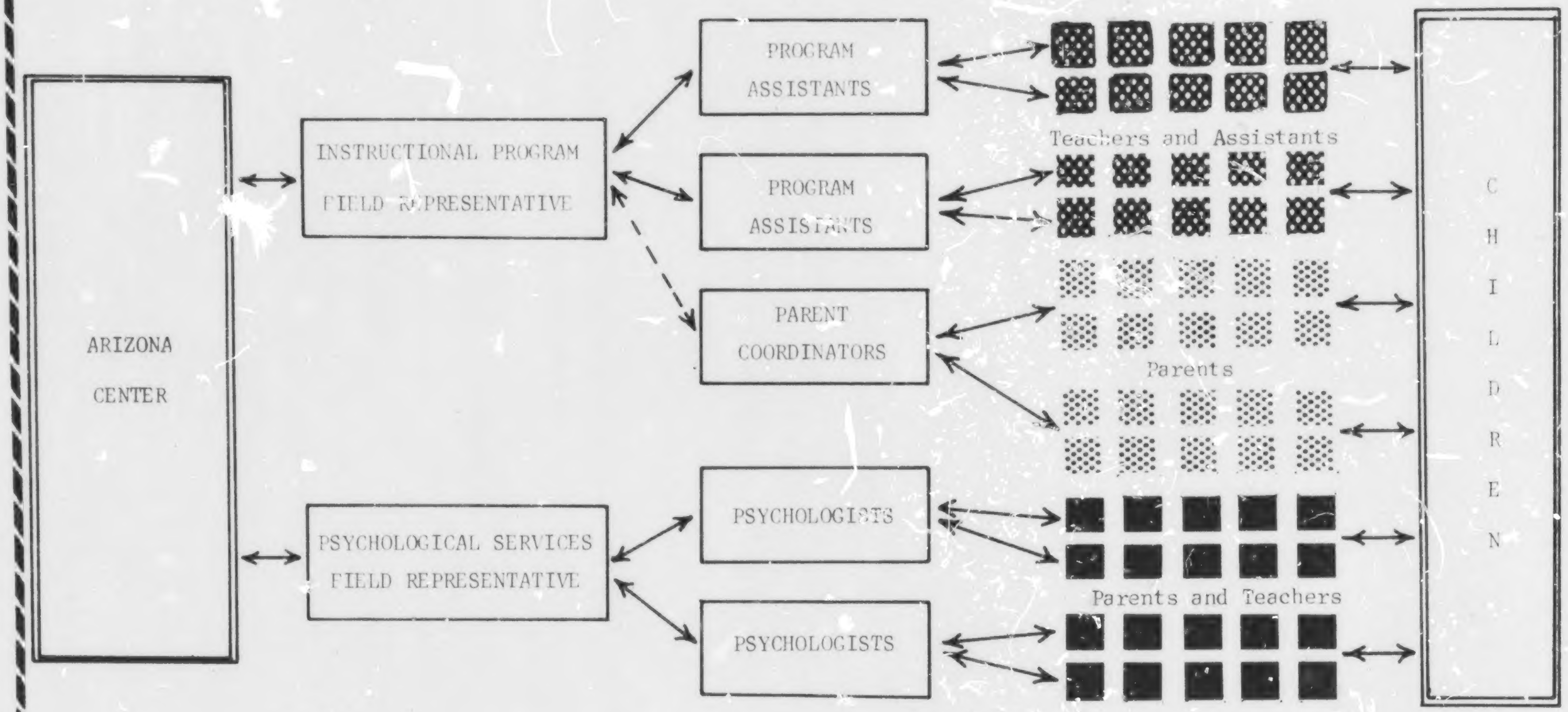
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FIELD REPRESENTATIVE
PSYCHOLOGICAL SERVICES
FIELD REPRESENTATIVE
PROGRAM
ASSISTANTS
PROGRAM
ASSISTANTS
PARENT
COORDINATORS
PSYCHOLOGISTS
PSYCHOLOGISTS
Teachers and Assistants
Parents
Parents and Teachers
CHILDREN

Figure 1. The Arizona System of Educational Services

DISSEMINATION

In TEEPS, field representatives transmit information to field psychologists through a four week summer training institute and through periodic visits to field settings during the school year.

The content of training includes: 1) methods for defining child behavior and the procedures used to change it in observable, i. e., measurable terms, 2) research and theory dealing with psychological processes, particularly thinking and learning processes, and 3) training in the consultation process.

The training process used during the summer institute involves the following steps: Program input is initiated through lecture and discussion. Lecture and discussion are followed by observation of video tapes illustrating applications of program principles. Role playing program applications follows observation. Finally, program techniques are applied in work with educational change agents. The application phase of training is initiated during the summer institute and followed up in the field.

SUMMER TRAINING - 1972

Only two inexperienced field psychologists were available for training during the regularly scheduled four week training period. One of these had received considerable on-site instruction, therefore, these two were invited to participate instead in the shorter two week session with the experienced psychologists. Eleven field psychologists plus the full Center staff of TEEPS participated in the two week session from June 5 to June 16, 1972.

Sessions were developed to provide new input from Center and field staff as well as allowing considerable time for mutual sharing of problems and successful endeavors. More specifically input topics included: 1) trends in training and certification of school psychologists, 2) designing and implementing parent groups, 3) motor skill development, 4) recent modeling research, 5) review of recent literature on reading, 6) TEEM approaches to reading instruction, and 7) implementing behavioral objectives. For each of these areas considerable input was provided by field psychologists regarding their efforts, success and particular problems. Some time was also devoted to procedural problems, specifically the use of data in TEEPS and ways in which appropriate data could be more efficiently obtained. One attempt to improve the efficiency of data handling was the provision of having the field psychologists provide the descriptive case data in recorded form. To this effect discussion of and training in the use of the recording format was provided.

In addition to the TEEM comprehensive post assessment, a short test devised by the TEEPS staff covering the training content was administered to all participants.

Informal and subsequent written communications from participants indicated that they found the summer training to be most worthwhile. Plans were enthusiastically developed for a mid-winter conference to be held at the Center during the upcoming year. In addition several suggestions from the field psychologists in regard to improving the liasion support activities from the Center were offered. These suggestions included: improving the feedback from field data collection, at least one on-site visit by staff involved in data collection and dissimination, and improving the sharing of information among field sites (with TEEPS functioning as a clearing house).

PROGRAM OBJECTIVES

The TEEPS program focuses on learning and adjustment problems identified by teachers and other personnel associated with the instructional program of the Tucson Model. The word "problems" is used in a special sense. It does not refer to disabilities or inadequacies inherent in a child. Rather, it indicates the task of formulating and implementing strategies to enable a child to achieve desired goal behaviors. This usage of the term "problems" greatly broadens the kinds of situations in which psychological services could be applied. Traditionally, psychologists in schools have dealt mainly with so-called deviant behaviors. TEEPS is designed to overcome this limitation. For example, TEEPS can be used to facilitate the development of intellectual skills, leadership skills, social skills, and creativity in children.

RESEARCH AND DEVELOPMENT

Activities in TEEPS at the Arizona Center during the past year have focused on the following areas: the development of a set of evaluation procedures for assessing the overall effectiveness, acceptance, implementation and efficiency of the TEEPS program was continued and the computer-based analysis of the program (TEEPS) was implemented. In addition to the evaluation work, there was a continued effort to refine and to broaden the extent of the consultation process, the vehicle through which psychological theory and practice is communicated to educational change agents. These efforts have resulted in the behavioral objectives procedures to be used by the Psychological Services field representative with the psychologist in the community.

Current thinking on the consultation process is presented in the next major section of this report.

CONSULTATION

NEED AND DEFINITION

As mentioned above, the central vehicle for applying psychology within educational settings has been the certified individual practitioner. His focus, in the main has been on the direct application of services to children.

Knowledge and techniques in the field of psychology can have little impact on education if they are not made available to educational change agents. In the past, two procedures have been used to disseminate psychological theory and practice to educators. Psychology has been transmitted directly to educators in teacher training programs. Prospective teachers for many years have been required to take courses in psychology and educational psychology as part of their pre-service training. In addition, graduate students often take an advanced course in general educational psychology. Psychology is transmitted indirectly into the curriculum through the impact which it has on authors of curriculum materials. For example, curriculum materials in recent years have been heavily influenced by learning principles underlying programmed instruction. While both the direct effects of course work and the indirect effects through author influence have a desirable impact on education, they have not provided teachers with means for bringing psychological principles to bear on daily classroom problems. The content of psychology is far too broad to be communicated adequately in one or two survey courses. Furthermore, course work settings are necessarily remote from continuing needs encountered in the classroom. Curriculum materials are not flexible enough to meet the unexpected needs for psychological principles which arise during instruction. The TEEPS program has selected consultation as a vehicle for providing educational change agents with access to psychological theory and practice available to change agents who deal directly with children.

The consultant achieves his goal by eliciting statements from the change agent which reflect psychological concepts relevant to the solution of the educational problem under consideration. The change agent uses the elicited statements to solve the problem. For example, one step involved in solving an educational problem is to state the problem in behavioral terms. The consultant would not attempt to accomplish this step by explaining the characteristics of behavioral definitions to the change agent. Rather, he would ask a series of questions likely to elicit a behavioral definition.

For example, he might begin by asking: "What does Jimmie do when he disrupts the class?" A question such as this will tend to elicit a concrete description of behavior on the part of the teacher.

Another point which needs clarification is that consultation is not management. The psychologist does not tell the change agent how to solve an educational problem. Consultation is based on the position that the change agent should be responsible for defining the educational problem, planning a solution for it, and in most instances implementing whatever intervention is undertaken.

There are advantages to an approach stressing change agent responsibility. An educational problem which is managed by the change agent directly responsible for the child will tend to be handled in a manner which is relevant to the on-going educational program of which the child is a part. Relevancy may be lacking when the psychologist services the child directly. Also, a change agent probably is more likely to implement a program which he has designed than one constructed by the psychologist.

THE PURPOSE OF CONSULTATION

The aim of consultation is to change child behavior. However, consultation very likely eventuates in alterations in change agent and psychologist behavior as well as child behavior. Implicit in any intervention program is the fact that the change agent implementing the program will do something different from what he has been doing. Furthermore, if the intervention is successful, the change agent will be rewarded for altering his own behavior. Consultation may be thought of as a kind of teacher/parent training program in that it eventuates in rewarded alterations of the behaviors of these change agents.

Consultation may produce alterations in psychologist behavior as well as change agent behavior. The consultant receives a great deal of input from change agents which may affect his thinking concerning educational problems. Furthermore, he receives feedback as to the effectiveness of intervention programs designed in consultation which may alter his thinking about such programs.

BEHAVIORS DEFINED IN CONSULTATION

In order to assist change agents to modify child behavior, it is necessary to define the behavior to be modified and the behavior expected as a result of modification. For example, in order to assist a teacher to develop leadership skills in a child, it is necessary to define leadership skills in such a way as to permit assessment of the child's current level of leadership and that expected as a result of leadership training.

Target Behaviors. In the TEEPS program, actions selected for modification are called target behaviors. A target behavior is defined behaviorally by a target behavior class, target behavior exemplars, conditions under which target behavior occurs and target behavior strenth.

The target behavior class specifies the category which defines the behaviors chosen for modification. For example, a teacher may wish to label kicking, pinching, and biting behaviors as aggressive. The justification for grouping behaviors into a category is the assumption that the behaviors in question are all controlled by the same class of consequences.

For example, hitting, pinching and biting behaviors may all be controlled by teacher attention. If however, one of these behaviors were to be controlled by some other reinforcer such as peer approval, then it would not be appropriate to group all three behaviors into a single class.

Target behavior exemplars are examples of behaviors falling within a target behavior class. Target behavior exemplars are those behaviors which are to be recorded by the change agent.

The specification of conditions includes those events which occur just prior to and just after the target behavior exemplars as well as the conditions under which the target behavior occurs. For example, a child might engage in aggressive behavior in a particular committee just after seeking the teacher's attention and not getting it. The consequent events just following this target behavior might include a reprimand from the teacher. Strength specifies quantitative characteristics of behavior (e.g., rate of occurrence). For instance, in the above example, strength might be measured as the number of times each day the target behavior occurred in committee.

Goal Behaviors. Goal behaviors are those actions which the change agent wishes the child to perform. A goal behavior is defined by a goal behavior class, goal behavior exemplars, conditions under which goal behavior is to occur, and desired strength of behavior. The goal behavior class indicates the category defining the behaviors which the change agent wishes to produce in the child. Goal behavior exemplars are examples of behaviors falling within a goal behavior class. Goal behavior exemplars must be defined in a manner which will permit them to be measured by the recording procedure adopted in the initial phase of consultation. Conditions and strength of goal behaviors are specified in the same manner as that employed for target behaviors.

It is important to note that goal behaviors actually are target behaviors for which a criterion strength level has been specified.

THE CONSULTATION PROCESS

The consultation process is conceived in four stages: problem identification, problem analysis, intervention, and evaluation.

Problem Identification. Problem identification has two purposes: to obtain a definition of the problem in behavioral terms, and to establish recording procedures for measuring the incidence of the problem behavior. These purposes are accomplished in an interview between the psychologist and the change agent.

Problem Analysis. The purposes of problem analysis are: to identify those variables which might be controlling behavior chosen for modification, to define the criterion strength level for goal behaviors and to establish a plan to enable the child to achieve goal behaviors. Problem analysis also requires an interview between the psychologist and the change agent.

Intervention. The purposes of intervention are to implement the modification plan and to measure child behavior during modification.

Evaluation. In the evaluation interview, data collected prior to and during intervention are assessed to determine whether or not intervention has been effective. If the goal established in problem analysis has been achieved, services may terminate. Sometimes however, the change agent may identify other behaviors for modification. In such cases, the interview shifts from evaluation to problem identification. If the goal has not been attained, further problem analysis is undertaken and a new intervention plan devised.

INTERVIEWING BEHAVIORS

The psychologist achieves his goals in consultation through the use of several different types of interviewing behaviors. For example, the organization of an interview is established through the use of structuring behaviors.

Structuring Behaviors. Structuring behaviors are statements questions which specify in broad terms the topics to be discussed in a given phase of an interview. A structuring behavior includes specification of a class of behaviors or events and an implied or explicit request that the change agent talk about the class which has been specified. Structuring behaviors are always used to initiate an interview. For instance, in the problem identification interview, a structuring behavior is used to introduce the educational problem to be discussed and to elicit general information about the child. For example, the psychologist might begin the problem identification interview by saying: "Tell me about Jimmie."

In the problem analysis interview a structuring behavior introduces discussion of baseline data. For example, the psychologist might begin the problem analysis interview by saying: "Let's look at the data you collected last week."

Structuring behaviors are also used to change topics in an interview.

For example, toward the end of the problem identification interview the psychologist typically would want to discuss behavior recording. He might say: "We may need to make some plans to get some concrete data on Jimmie's behavior.

A third use of the structuring behavior is to re-establish focus. When irrelevant material is introduced by the change agent, the psychologist may return the conversation to its previous focus by ignoring the irrelevant material and countering with a structuring behavior. For example if the psychologist wishes to obtain information about classroom behavior, and the teacher says: "Of course, Jimmie's home life is just awful. His parents are divorced, and his mother is there only half the time. Don't you think this may have something to do with his behavior here at school?" The psychologist may say: "Tell me about what Jimmie does at school."

A final use of structuring behaviors is to obtain additional information on a topic. For example, the psychologist may say: "Tell me more about Jimmie's behavior during reading activities."

Defining Behaviors. In specifying target behaviors, goal behaviors, and recording and intervention plans, the psychologist uses defining behaviors. Defining behaviors are statements calling for descriptions of behaviors, or the conditions under which behaviors occur, or the strength of the behaviors. The list that follows specifies types and examples of defining behaviors:

1. Behavior Exemplar Elicitors: A target exemplar elicitor requests the change agent to detail instances of a target class. For example, the psychologist might say: "What does Jimmie do when he disrupts the class?"

2. Target Behavior Elicitors: A target behavior elicitor requests the change agent to specify the behavior to be recorded. "On which of these behaviors would you like to take data?"

3. Goal Behavior Elicitors: Goal behavior elicitors direct the change agent to specify instances *of the goal class*. For example, the psychologist might say: "What kinds of things would Susan need to do to show that she was participating in committee activities?"

4. Strength Elicitors: Strength elicitors direct the change agent to specify quantitative characteristics (e.g., amplitude, latency, frequency) of behavior. For example, in eliciting the strength of a behavior, the psychologist might ask: "Approximately how often does this occur?

5. Conditions Elicitors: Conditions elicitors require the change agent to specify the conditions under which a behavior either should or does occur. There are three types of conditions elicitors:

   a) Antecedent Condition Elicitors: Antecedent condition elicitors are requests for information about events prior to a target or goal behavior. For example, the psychologist may ask: "What generally happens before Susan destroys the work of another child?"

   b) Consequent Condition Elicitors: Consequent condition elicitors request the change agent to specify events following a target or goal behavior. For example, the psychologist might ask: "What generally happens after Charles hits another child?" In addition, he might say: "What then, do you do, and how do the other children react?"

   c) Situational Conditions Elicitors: Situational conditions elicitors are requests for specification of the settings in which specific behaviors occur. For example, the psychologist might ask: "When does Susan's crying typically occur?"

Summarizing Behaviors. A third type of interviewing behavior used in consultation is the summarizing behavior. Summarizing behaviors are statements which recount the content of a previous interview or phase of an interview. Summarizing behaviors may help the psychologist and the change agent to remember what has been said. For example, the psychologist might say: "You've said that Mary hits others, kicks the chairs, and throws crayons on the floor." This enumeration helps the psychologist and the teacher recall the information which the teacher has given.

Summarizing behaviors also assist in validating the extent to which the psychologist and the change agent agree on what has been communicated. When the psychologist enumerates points previously made in an interview, the change agent is afforded the opportunity of validating what the psychologist has said. For example, if the psychologist were to say: "You say that Rose hits and kicks and grabs things away from other children, and won't share things with other." The teacher might say: "That's partly right. However, Rose does share some of the time."

Finally, summarizing behaviors may serve as a catalyst in initiating interpretations of behavior. The psychologist, by mentioning two events which he hypothesizes are related, may plant the seeds for consideration of the relationship by the change agent. For example, he might say: "You say that when Susan makes mistakes reading her talking murals, you give her individual help, that Susan seems to enjoy this help, and that this is her main opportunity to interact with you on an individual basis."

The psychologist might follow this statement with an interpretation suggesting the possibility that teacher attention could be reinforcing inaccurate oral reading. However, the summary might make it possible for the teacher to make the reinforcement interpretation without assistance.

Information Behaviors. There are circumstances in consultation which call for the rendering of factual information to the change agent. Information behaviors are statements which convey such information. Informative behaviors can be used to make the change agent aware of recording procedures. For example, in the problem identification interview, the psychologist might say: "You could count the number of times when Charles leaves various groups during the day as an indication of group participation, or you might wish to record the amount of time in minutes he remains in various groups."

Informative behaviors are used to report the results of an informal assessment of a child's skills. For example, the psychologist might say: "I found that he could identify top and bottom, but he had difficulty with left and right."

Finally, informative behaviors are used to indicate the results of a classroom observation. The psychologist might say: "I noticed that when Susan tried to talk to other children, Charles interrupted her."

Interpretive Behaviors. During the problem analysis phase of consultation the psychologist may wish to infer functional relationships with respect to a behavior and the events surrounding it or he may wish to make inferences about skills underlying effective task accomplishment. To accomplish such purposes the psychologist would use interpretive behaviors. Interpretive behaviors are statements of inference. They typically are used following a summarizing behavior enumerating the variables which are crucial to whatever inference is to be made. For example, after an appropriate summarizing behavior, the psychologist might say: "It may be that Jimmie is hitting the other children to get your attention."

Validating Behaviors. It is essential to insure agreement with the change agent at a number of points during consultation. Validating behaviors are statements designed to determine whether or not the change agent and psychologist agree on some specific point.

Validating behaviors are used to obtain agreement as to problem definition. It is crucial for the psychologist to insure that he and the change agent agree on the definition of the problem under consideration. At the end of the problem definition phase of the problem identification interview, the psychologist should make a summarizing statement defining the problem in terms of target exemplars, conditions, and strength. He should then make a validating statement such as: "This, then, is the problem. Is that right?"

Validating behaviors are used to obtain agreement with respect to recording procedures. In the problem identification, problem analysis, and evaluation phases of the consultation process, it is necessary to obtain agreement as to the nature of the recording procedure. The recording procedure should remain constant through all phases of consultation. In each phase of consultation the conditions, strength, and exemplars to be recorded should be validated.

In the problem analysis interview, after a summarizing behavior specifying conditions, strength, and procedures, the psychologist should make a validating statement to insure mutual agreement as to the definition of the modification plan. He might say: "This, then, is the plan, correct?"

In the problem evaluation interview, the psychologist should summarize the data and the previously established goal of intervention. He should then make a validating statement. "Can we say from these data that your goal has been achieved?"

Reinforcers. Verbal reinforcers are occasionally used in consultation. The central use of reinforcement in the consultation process is to maintain verbal behavior on the part of the change agent. For example, the psychologist might say: "Hm-mm" periodically to maintain talking on the part of the teacher.

ANALYSIS PROCEDURES

Informal applications of functional analysisi (Skinner, 1953) and task analysis (Gagne, 1970) are used extensively in establishing the causes of behavior during consultation. Functional analysis is the determination of antecedent and consequent events which control specific behaviors. Task analysis is the specification of behaviors which are prerequisite to a goal behavior.

Applications of analysis procedures are informal in the sense that their use in consultation typically should not involve the scientific rigor which would be demanded in a research setting. For example, suppose that a psychologist and a teacher hypothesize that a particular consequent event is controlling aggressive behavior in a child. They remove the event and the aggressive behavior diminishes. At this point, the teacher's goal has been reached. The scientist in a research setting, however, would probably not be satisfied that the consequent event under study really was controlling aggression. As a further check on the hypothesis, he might reinstate the consequent event to increase aggressive behavior and then remove it a second time to determine whether or not it consistently diminished aggression.

APPLICATION

The interviewing behaviors described above are used in all phases of the consultation process and within all aspects of the scope of Psychological Services presently being used.

In addition to the main focus of the consultation process in providing services to individual children, two special applications of the consultation process, Intellectual Skills and Behavioral Objectives, have been initiated during the past year.

INTELLECTUAL SKILLS CONSULTATION

For the better part of a century, conception of intellectual competence in Western culture have been dominated by the concept of intellectual abilities. The central use of the abilities concept has been to classify people. Ability classifications have served the important purpose of facilitating society's access to human resources by providing an economical means for identiying those individuals whose intellectual competencies could be harnessed to the complex tasks of a technological age.

In recent years the use of the abilities concept has extended beyond classification. At the beginning of the 1960's, McV. Hunt (1961) marshalled evidence challenging long dominant assumptions of genetically fixed intelligence and pre-determined intellectual development. In light of this challenge, some educators began to take seriously the notion that intellectual competence could be changed through instruction and, by the middle of the 1960's, programs were developed which were committed to the task of teaching abilities to young children. Bissell (1970), in a recent review of such programs, has indicated that structured pre-school experiences can have a facilitating effect on intellectual competence as measured by such tests as the Stanford-Binet Intelligence Scale and the Illinois Test of Psycholinguistic Abilities.

In light of the growing interest in and supportive evidence for programs to alter intellectual competence, it is important to examine the role of the abilities concept in the assessment of changes in competence. As mentioned above, the abilities concept has been used primarily for classification purposes, not for purpose of assessing change. The movement of the nation to a consideration of procedures for modifying intellectual capabilities calls for a new examination of the abilities concept and raises the question of whether or not the concept ought to be augmented by another concept specifically designed to reflect capability change.

Abilities and Prediction. The term ability may be described quite simply as behavior which an individual can emit. The simplicity of this denotation belies the fact that abilities are defined empirically by an elaborate set of conventions designed to serve the purpose of predicting behavior.

The conventions of the prediction paradigm are familiar to every psychologist: 1) Test items chosen to measure abilities are selected so as to maximize individual differences in performance. Items which too many people pass or too many people fail are excluded because they do not help to maximize individual differences. 2) Since the purpose of ability measurement is to predict performance, validity is established by correlating ability measures with criterion measures. 3) Since accurate prediction requires stability in individual differences, reliability is established by assessing the extent to which individual differences are consistent within a test, or between two forms of the same test, or over time. 4) An individual's test performance is described by stating his position in a reference group. 5) Finally, abilities are defined, typically through factor analytic procedures, on the basis of clusterings of correlations.

Abilities and Instruction. Whenever there is a need to select individuals for inclusion in or exclusion from a given group on the basis of predicted criterion performance, the ability concept is of value. Despite its value for selection purposes, however, the ability concept is not well suited to the task of teaching intellectual competencies. One problem associated with the concept is that it does not require behavioral definition of abilities. Because behavioral definition is lacking, there is no clear basis for determining what behaviors should be taught to increase a given ability. For example, consider tasks such as those used in the similarities subtest of the Wechsler Adult Intelligence Scale (Wechsler, 1955). The items on this subtest require the examinee to specify the manner in which two things are alike. The examinee's answers for each item are recorded, but the behaviors responsible for producing those answers are not indicated. Because behavioral specificity is lacking, it is difficult to determine what behaviors to teach to increase the ability measured by the similarities subtest.

A second problem associated with the abilities concept is lack of sampling specificity. When a sample of items is selected to represent a population, the population and the sampling procedure should be specified. Such specification is lacking in virtually all ability tests. When the population of items underlying a subtest sample is not specified, it is not possible to devise a sampling procedure to assist in relating ability instruction to ability assessment. Consider the case of a vocabulary subtest such as that used in the Stanford Binet Scale.(Terman and Merrill, 1960). If one were to teach the words on the subtest, one would be accused of teaching the test and not the ability measured by the test. If one were systematically to avoid subtest words, presumably there would be little change in future performance on the subtest. It is impossible to establish any practical way to select words to relate instruction to ability assessment because the population of words used to construct the test is not specified.

The procedure of describing individual performance in terms of position in a norm group is another shortcoming of the ability concept. Norm referenced scores obscure information about what a student can or cannot do by substituting for such information nothing more than a description of group position (Glaser, 1963).

Norm referenced scores obscure behavioral change as well as behavioral specificity. The most direct way to measure ability acquisition would be to assess the extent to which an individual's performance of an ability behavior changed over time. Acquisition typically is not assessed in this fashion.

It is measured not by change in performance, but rather by change in group position. Consider a group of ten first-grade children who differ in the ability to remember sequences of digits. By the time the children are third graders, their memories will probably all have improved, but their relative positions in the group may tend to remain constant. In order for a child to demonstrate a change in ability,he must be able to show not merely that his performance has improved, but that the improvement has been at a faster rate than is the case for others in an appropriate reference group. When change is measured against a standard (the norm group) which is itself changing, the apparent extent of change necessarily will be attenuated.

A final difficulty with the ability concept has to do with the purpose of ability training. Presumably, the purpose of ability training is to provide competencies which assist an individual to accomplish criterion tasks which he otherwise might not have been able to accomplish. Accordingly, it is reasonable to expect that the criterion tasks be specified and that the influence of ability training on criterion task performance be demonstrated. Ability tests do not specify the manner in which ability behaviors influence criterion task performance. They indicate only position in a reference group.

The problem of the ability concept with respect to the purpose of ability training is clearly illustrated in recent efforts to base ability training programs on scores obtained on diagnostic ability tests. The general format for the construction of diagnostic ability tests includes a series of subtests under a heading such as language abilities. Typically each of the subtests is assumed to measure a separate ability. A child receives a score on all subtests as well as total score. These scores are in essence standard scores which specify the child's position with respect to a norm group. The child is given a profile which indicates for each subtest the extent to which his performance deviates from the average. Instruction is often prescribed on the basis of the profile. For example, if a child is above average on six subtests and below average on three, it may be suggested that he receive instruction in the three areas in which his performance is low.

The basic task which diagnostic ability tests are designed to accomplish presumes empirical demonstration of ability training benefits with respect to the performance of criterion tasks. Unfortunately, diagnostic ability tests indicate only group position. Criterion task performance to be facilitated by ability training is often not even specified.

Intellectual Skills: Need for the Concept. The above discussion suggests the need for a new approach to the teaching of intellectual competencies. The concept of ability has been linked for so long to prediction conventions that it is doubtful that new meanings could be attached to it without creating a great deal of confusion. Yet, there is a need for a concept in many respects analogous to that of ability.

Radical behaviorists, operating as though there were no justification for an ability concept, have attempted to alter learning by applying a single set of procedures to all individuals regardless of individual differences in the kinds of competencies brought to the learning task. Certain behaviors have proven to be extremely resistant to change under procedures advocated by behaviorists (e.g. vida Flavell, 1963). Gagné (1968) has argued quite effectively that the lack of success of the behaviorists can be traced to a failure to determine and to teach those behaviors which are prerequisite to the mastery of learning tasks.

There is a need to establish a concept like that of ability to serve as a basis for specifying behaviors which underlie task mastery. The term intellectual skill shows signs of emerging as a suitable label for such a concept. Although the idea of skill has been linked primarily to the study of motor coordination, it does have properties which make it a likely choice for use in describing intellectual behaviors. First, although the term intellectual skill has been used to describe intellectual competencies (Resnick, 1967; Gagné, 1970, 1971), it is not yet firmly entrenched in an existing set of technological conventions as is the case with the concept of ability. Thus, the way is open to shape the behavioral definition of the concept to enhance its usefulness as a tool in the teaching of intellectual competencies. A second desirable property of the term skill is that common usage of the word indicates behavior which can be acquired through instruction. Thus, the spectre of the nature-nuture issue would probably not become involved in debates over the training of intellectual skills to the extent that it has been associated with arguments over the training of intellectual abilities.

Definition. An intellectual skill may be defined as a behavioral capability which, when activated, functions to facilitate the performance of a culturally relevant task. The relationship between behavior and function in this definition is important. According to the definition, an intellectual skill, when activated, is behavior serving a particular kind of function. If the behavior were to occur without its attendant function, it would not be operating as an intellectual skill.

Consider the following mediating response paradigm: S--r--s--R in which S is a stimulus, r a covert response, s the covert response serving as a stimulus for R, the final overt response. Assume that a given individual cannot emit R upon presentation of S without mediation. $r \sim s$ for that individual could be classified as an intellectual skill. r by itself would not be an intellectual skill. r functioning as s signalling the overt response R would be an intellectual skill.

The specification of function as a critical feature of the definition of an intellectual skill is not merely academic nitpicking. It is common practice in existing training programs designed to produce intellectual gains to teach behaviors classified as intellectucal competencies without careful specification of, or instruction in, the use of those behaviors.

Defining Attributes. The above definition of intellectual skills suggests three criteria for distinguishing intellectual skills from other behavioral phenomena: The first of these criteria is a definition of skill behavior in performance terms. Gagné (1970) supports this view when he suggests that a prerequisite for identifying intellectual skills in learing hierarchies be a specification of the behaviors in such hierarchies in performance language. The importance of performance specificity is, of course, that it enables educators to define precisely what they are trying to teach. As pointed out above, one of the difficulties with the ability concept is that it does not require performance definition. The above discussion of the problem of lack of performance specificity clearly illustrates the need for making such specificity an essential aspect of intellectual skill definition.

A second criterion suggested for defining an intellectual skill is the demonstration of transfer effects. The most important reason for distinguishing intellectual skills from other behaviors is that it is useful to have a name for those behaviors with transfer properties that facilitate the learning, performance, and/or retention of various criterion tasks. The potential to apply a capability to facilitate the performance of a criterion task has long been thought to be the hallmark of intelligence. Accordingly, the empirical demonstration of transfer ought to be a criterion for defining intellectual skills.

The final criterion suggested with respect to intellectual skill definition has to do with cultural relevance. In order for a behavior to be classified as an intellectual skill, the tasks used to demonstrate transfer effects for the behavior ought to be of established cultural relevance.

Concern for cultural relevance has always exerted influence on concepts of intellectual competence. Presently, such concern is most clearly evidenced in the convention of establishing the validity of ability tests by correlating them with criterion measures of known relevance. Despite this convention, however, cultural relevance in instruction designed to promote intellectual competence is rarely established.

Conventions for Defining Skills. Just as it was necessary to establish conventions for defining and measuring abilities to serve classification needs, it will be necessary to establish conventions for defining and measuring intellectual skills to be developed to serve instructional needs. There are well known procedures which could be applied as conventions for defining intellectual skills. To meet the criterion of performance definition, available procedures for specifying behavioral objectives (Mager, 1962) could be adapted. If these procedures were used, the class or population of behaviors representing a skill would be specified. Exemplars of the class would be given. The conditions under which the skill is performed would be detailed and the level of acceptable performance defined.

There are several procedures which can be described as conventions for demonstrating transfer. Procedures involving experimental-control comparisons which have long been used in research on learning can be thought of as conventions for revealing transfer. Recently, procedures have been suggested by Gagné (1968), Resnick (1967), and Resnick and Wang (1969) to demonstrate transfer with respect to intellectual skills in learning hierarchies. Finally, the time series design (Campbell and Stanley, 1963), because it required neither randomization nor controls, is useful for demonstrating transfer in field settings.

Use of the time series design should be linked to controlled experimental research because of validity problems with the design. In the time series design the independent variable is interjected after a series of baseline measurements have been made. Additional measurements are made following introduction of the independent variable. Campbell and Stanley (1963) have listed the sources of invalidity involved in time series experiments. The principle validity problems associated with the design have to do with generalizing results to new populations or settings. Problems of this sort are not always of major concern to educational change agents. For example, if the teacher's problem is to ascertain what will work in his or her classroom, generalization to other classrooms or populations may not be an important issue. An additional validity problem with time series experiments involves the possibility that an event other than the independent variable occuring at approximately the same time as the onset of the independent variable may exert a controlling influence on the dependent variable.

Because the character and needs of a culture change over time, conventions for establishing cultural relevance of transfer tasks associated with skill behaviors must be based on human judgment rather than objective standards. There are established means in American culture for making judgments as to those takss which are relevant to cultural goals. The various annual meetings and special conferences of professional groups and the publications of experts in fields related to education provide examples of existing sources for determining relevance at the national level. School boards, parent advisory groups and the like proved important sources for determining cultural relevance at the local level.

Application of the Intellectual Skills Concept. One promising application of the intellectual skills concept is in curriculum design. Detailed discussions of curriculum applications have been provided by Gagné (1970) and Resnick (1967). These authors describe a number of examples of the identification of intellectual skills forming learning hierarchies underlying the accomplishment of academic tasks. These hierarchies have been used as a basis for specifying what should be taught and in what sequence it should be presented. Instructional sequencing has been individualized by giving students a diagnostic test to determine which intellectual skills they already have in their repertoire and which they need to acquire.

The intellectual skills concept is being used in providing psychological services to individual children through TEEPS. The work of the school psychologist, perhaps more than any other psychological practitioner, has been intimately involved with the conept of intellectual abilities. School psychologists have been given the responsibility of assessing mental ability as a basis for placing children in special education programs. The intellectual skills concept offers a potentially useful addition to existing tools in school psychology for dealing with problems of intellectual competence.

The following example provided by a psychological consultant in the Follow Through project will serve to illustrate the application of the intellectual skills concept in the consultation process: (Brown personal communication). A fourth-grade boy who will be called Jimmie was referred to Mr. Brown, the psychological consultant because he could not do even simple arithmetic problems. Instruction in arithmetic at the time of the referral involved the use of dittoed worksheets containing addition problems. The teacher and other class members were available to answer questions for students experiencing difficulty.

During problem identification, the following goal was selected: Given combinations of two one-digit numbers presented on worksheets, Jimmie will be able to add the two numbers together correctly 100% of the time. A baseline record of addition performance was collected by the teacher over a five day period. The psychologist observed Jimmie twice during arithmetic activities. These formal observations indicated that Jimmie stayed on task most of the time during arithmetic. The teacher corroborated this observation by commenting that Jimmie was a hard worker. The psychologist also observed that there was no discernible reinforcement for poor arithmetic work. Papers completed during arithmetic were put in a folder without comment from the teacher. Praise was sometimes subsequenlty given for good work, but no criticism seemed to be tendered with respect to bad work.

The above observations led the psychologist to believe that the problem should be attacked from the standpoint of component skills development. Accordingly, the psychologist performed a component skills analysis with respect to the goal behavior and tentatively identified the following prerequisite skill behaviors:

Given visually presented numerals one through twenty, Jimmie will be able to identify the numerals correctly 100% of the time. Given verbal instructions to count to twenty, Jimmie will be able to do so with no errors. Given instructions to count up from a number greater than zero to another specified number no greater than twenty, Jimmie will be able to do so with 100% accuracy. Given a printed numeral ranging in value from zero to twenty, Jimmie will be able to represent 100% of the time the value of the numeral by making the correct number of dots with a pencil on the numeral in a specific pattern. Given a printed numeral and a pattern of dots neither of which exceed nine in value, Jimmie will be able to indicate verbally the correct answer to the addition of the dots to the number represented in print 100% pf the time. For example, if the problem given were: 2 + ⁝ , the answer would be five.

On the fifth day of baseline the psychological consultant tested Jimmie and found that he could not perform the last three of the five skill behaviors specified above. The consultant shared this information with the teacher, and together they devised a plan to teach the child the tentatively identified skill behaviors. Instruction in addition continued in the manner specified for baseline recording. The basic procedure used to teach all of the skills was first to model the correct responses. Jimmie was then reinforced with verbal praise for correct imitations of the model. Incorrect imitations were followed by further modeling. At the end of each day of training, tests ranging from six to ten items for each skill were administered. Training last approximately ten minutes a day for each skill taught. Figure _4_ presents the results of

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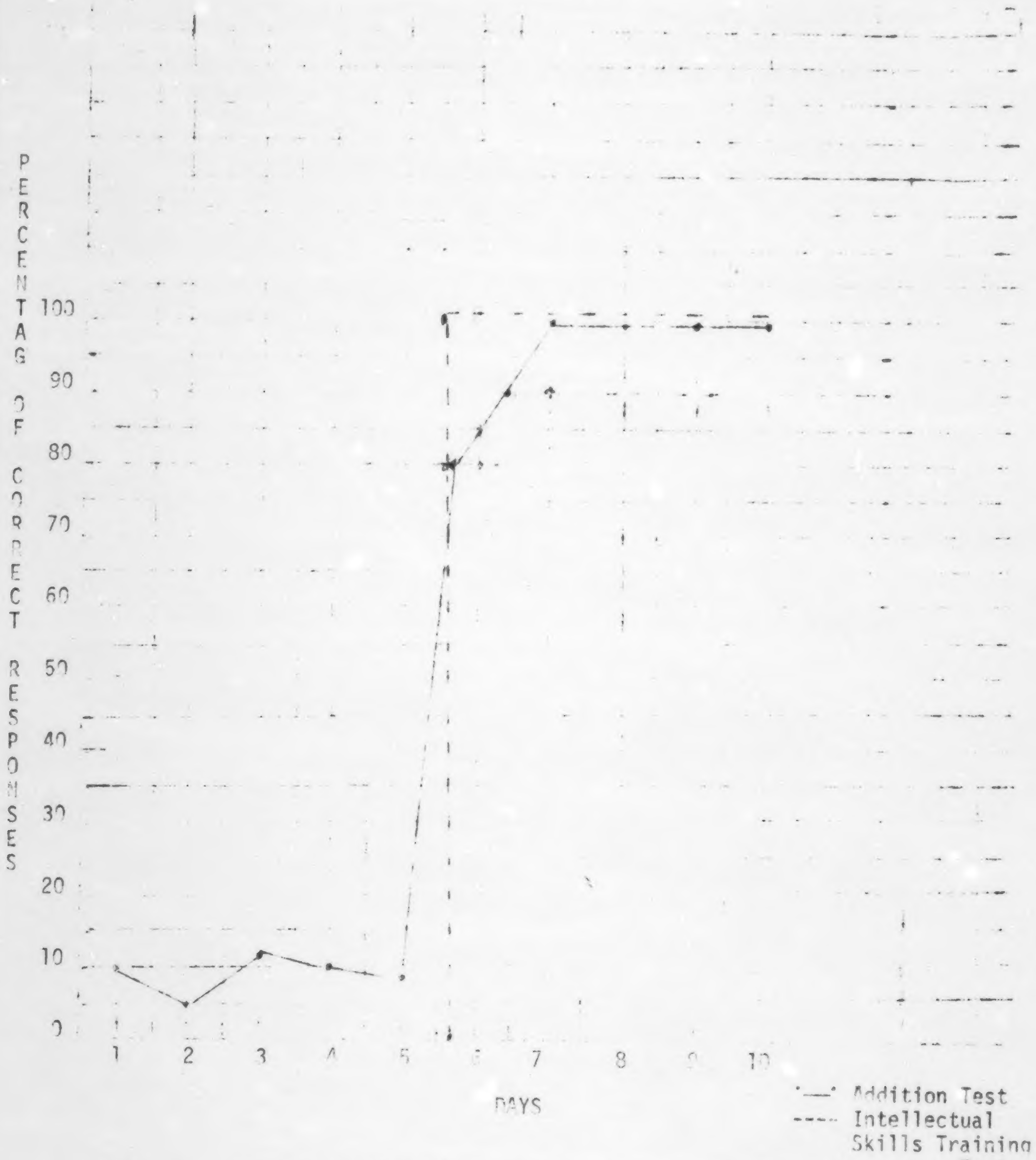

FIGURE 4. Changes in addition performance associated with changes in performance of intellectual skill behaviors

the skill training procedure. Performance levels for all three skills were exactly the same for all days of training. These levels are represented by the dotted line in the figure. Performance for all three skills reached 100% accuracy on the first day of training. Four subsequent days of training were given to insure stability of performance of the skill behaviors. As shown in the graph, performance in addition increased dramatically with acquisition of skill behaviors. By the third day of intervention addition performance had reached 100% accuracy.

The time series design does not afford the opportunity to determine which of the intellectual skill behaviors trained was responsible for producing change in criterion task performance. Of course, in the event that a psychologist were to have the opportunity to work on more than one case of the same general type, it would be possible to vary the composition of and/or the number of intellectual skills designed to produce the desired outcome.

There are several advantages to the consultation approach to intellectual skill training: One is that it provides data showing the functional relationship between the teaching of skills and the accomplishment of the criterion task with which the teacher is concerned. With the aid of an appropriate graph, the teacher is afforded the opportunity of observing the effects of intellectual skill training on criterion task performance. The notion that students should be taught principles with broad applicability rather than isolated facts has long been held by educators as a most desirable outcome of the teaching process. If teachers are expected to teach for transfer they must be given techniques to observe transfer when it occurs. The intellectual skills training procedure outlined above provides one technique for observing transfer.

Another advantage to consultation procedures is that they provide a means to validate the applicability of research findings in applied settings. Experimental findings in much of educational research are based on differences in group means. There is no guarantee that procedures experimentally validated by group differences can be applied with success to the individual child. Furthermore, numerous variables which may not be present in a controlled laboratory setting may influence the effectiveness of an experimentally validated procedure in the classroom. For these reasons it is useful to have some check to determine whether or not procedures suggested by research are indeed having the effects they are purported to have when they are applied in the schools.

Another benefit of consultation is that it provides data which can serve as a means for generating hypotheses which might form the basis for controlled laboratory research. For example, data such as those presented in Jimmie's case could be used to generate a number of studies on factors facilitating performance in addition.

The efficiency and practicality of the time series design represents still another advantage to consultation procedures. The efficiency of the design is clearly illustrated when it is compared with multiple baseline procedures or designs requiring reversals such as those often used in operant research. Reversal procedures are often impractical in applied settings. For example, one probably could not and would not want to use reversals in the teaching of intellectual skills. Multiple baseline designs are much more complex than the time series procedures used in consultation, although they may be useful in applied settings if adequate resources (i.e., personnel) are available to implement them.

Another advantage to consultation is immediacy of application. A staggering amount of research will be necessary before it will be possible to provide education with even an initial set of empirically validated learning hierarchies on a broad scale. Development and dissemination are never ending processes costly in both time and money. There is and will continue to be a need to get psychological principles into the schools more quickly than is possible through materials development. Consultation proceudres can, as in the example above, be used even in circumstances in which identifying skill behaviors is lacking. And of course, they can be used to apply research findings which have not as yet been incorporated into packaged materials.

A final advantage to consultation is that the approach requires that the problem which intellectual skill training is to assist in solving be identified in performance terms. Kaufman (1970) points out that the practice of implementing solutions to problems which have never been identified is not uncommon in education. Kaufman's point is certainly well taken with respect to the handling of problems of intellectual competence. Consider the possible ways in which cases like Jimmie's are typically handled in schools. Had little Jimmie's referral been dealt with by traditional school psychological services, the most likely course of action would have been to give him an intelligence test along with other psychological measures. If he had received a low score on the test, a decision might have been made to place him in a special class. A second likely outcome of referring Jimmie for psychological services might have been that Jimmie would have been given a diagnostic ability test. In the event that he received low scores on some subtests, a training program would have been devised to improve his competencies with respect to those subtests. Neither of these procedures require that the problem which initially caused the teacher to seek assistance be specified. It seems obvious that when the problem is not specified,there is not much chance that it will be solved.

There is an important philosophical difference between the consultation approach to the use of intellectual skills and the ability testing approaches mentioned above. The important questions to be answered basically are: Where do you want to go? What do you need to do to get there? and How do you know when you have arrived? The emphasis on evaluation in the consultation paradigm is on the accomplishments of the child, not on his deficits. There is no need to label a child as retarded or to say that he has a learning disability in order to apply an intellectual skills approach to teaching. Children being taught intellectual skills behaviors in the Follow Through Project seem to view the psychologist's evaluation of their behavior positively because that evaluation specifies their progress toward a goal, not their disabilities.

Conclusion. The central importance of both the concept of intellectual abilities and the concept of intellectual skills is that they identify factors which underlie the accomplishment of significant tasks within a culture. To say that a person learns academic material quickly because he has a good memory, or that he writes well because he is creative, is to say that there is something present in his behavior which has a determining influence on his effectiveness in task performance. To accomplish the goal of classifying people in terms of intellectual competence, it was sufficient to label that something as an internal set of traits called abilities.

The need for identifying intellectual capabilities is even greater with respect to the aim of changing intellectual competence than it has been with respect to the goal of classifying competence. The prupose for identification, however, has changed. Whereas, in the past it was sufficient to identify individuals who possessed behaviors underlying task accomplishment, it is now necessary to identify the behaviors themselves and their functions so that competencies can be taught. This shift in purpose demands a shift in the concepts and conventions used to define intellectual capability. Needs for selection continue to exist in society. In consequence, the notion of intellectual abilities remains viable. The concept of intellectual skills advanced here would augment the ability concept to make the definition of intellectual competence responsive to the goal of developing human intellect.

BEHAVIORAL OBJECTIVES CONSULTATION

During the past year, Psychological Services has implemented procedures by which consultation can be used to assist teachers in defining behavioral objectives and the measurement of progress of groups of children. The need for such an approach becomes centralized in a behavioral objectives system when attempts are made to answer the following kinds of questions: How can the effectiveness of the TEEM teaching procedures be demonstrated to persons outside the model, such as parents and the community? How can the extent to which teachers are implementing TEEM be evaluated? Which teaching procedures within TEEM are most effective? How can teachers receive needed feedback as to those teaching procedures which are working in her classroom? How can group and individual progress within the classroom be effectively evaluated without total dependence upon the use of standardized testing with its inherent limitations?

The last question points up an area of great concern for those professionals engaged in educating children. There are several advantages to utilizing criterion-based data when evaluating the extent of children's learning as compared to the strict reliance upon a norm-referenced base such as standardized testing. In the latter operation, the process results in scores which do not describe the child's behavioral capabilities, but only his location relative to a group of children with respect to particular types of tasks. In order to demonstrate that he has learned, the child would not only have to improve his score using a pre- and post-test but also change his position in relation to the same group by learning at a faster rate. When change is measured against a standard (the norm group) which is itself changing, the extent of change is necessarily attenuated.

Another problem with norm-referenced testing is the lack of sampling specificity. When samples of items are selected to represent a population, the population and sampling procedures should be specified. Such specification is lacking in virtually all ability tests. Because it is lacking, it becomes impossible to relate instruction to instructional assessment. For example, a teacher who instructed her children on the exact words of a vocabulary subtest would be guilty of teaching the test. But if she avoids the test words, few changes would be expected from her students when they took the subtest. By contrast, behavioral objectives work provides an avenue to relate instruction to measurement by explicitly specifying the population of items from which the final items will be sampled. Moreover, the means of sampling are specified.

The use of standardized testing, in [illegible] words, frequently is inadequate to test what is being taught. A criterion-referenced base can actually demonstrate what the child has learned in terms of acquired behavioral capabilities. This not only makes the teacher accountable for what the child is learning in her classroom but, in addition, gives her the immediate feedback necessary to make her teaching procedures more effective. Increases in learning are now demonstrated as the progress made towards learning a prescribed goal. If limited or no progress towards that goal is made, the teacher is then alerted to the ineffectiveness of the teaching procedures used in that particular setting so that alterations can be undertaken. The same method would apply to a group of children and the group's progress toward a specific goal.

The behavioral objectives consultation procedure consists of two sets of interviews: goal identification and goal analysis.

The purposes of the Goal Identification Interview are to choose the objective area, list the general instructional objectives in that area, and informally sequence those objectives, designate the instructional objectives of immediate concern and their behavioral specification, describe the intended teaching procedures, and specify measurement procedures (baseline and modification data collection) for the instructional objectives presently being taught. The purposes are more comprehensive than those listed for the child-problem consultation proceudres due mainly to the need for specification of teaching procedures as well as goals which are flexible enough so that they may be used with a group of children. So too, are the purposes of the Goal Analysis Interview which are briefly as follows: review descriptive data collected, evaluate teaching method effectiveness and adopt a plan for further consultation.

As is the case for individual target conditions and skill problems, a set of interviewing behaviors has been developed for behavioral objectives work. These interviewing behaviors are specifically designed to carry out the objectives of the Behavioral Objectives Interviews.

The resulting information from carrying out the interviewing behaviors within the Behavioral Objectives Interviews is recorded on the Goal Summary Sheet and Objective Sheet.

Basically, the utility of the procedure consists in the concrete specification of goals, the sequencing of these goals, the specification of teaching methods and, finally, the measurement of the effects of the methods utilized. Teachers are provided with continuous, immediate and ongoing feedback about the effectiveness of their behaviors and materials.

One distinct advantage of this approach is that no demand is made on the system to which it is being applied to change itself in order to fit the procedures. Rather, the procedures are very flexible and capable of adaptation to any instructional system. Behavioral objectives consultation is simply a method to formalize whatever is taking place informally. It is capable of being applied with instructional problems in any educational setting, including any goals for entire classrooms or subpopulations of children, goals for teachers and other instructional personnel. All that is required is a specified goal and the specification of the teaching methods to be used.

Another advantage consists in the capacity of behavioral objectives data to furnish both individual and group data. Various data collection procedures are currently in use depending upon the extent of information the teacher wants for individual students. One procedure for data collection is provided by a rotating random sampling procedure without replacement. Briefly, the teacher is asked how many children she would be willing to collect data for each day. The number, of course, varies with the time required for children to complete their ~~informal~~ test tasks. A minimal number is usually three or four. Next, the children to be measured are each assigned to a number on a tentative list. Then, through a table of random numbers, the children are assigned to new positions on a random list. Each day the teacher will measure the predetermined number of children in the order they fall on that new list, for example, in groups of three on a daily basis. When the list is exhausted, the teacher starts again at the top. Each day the data depicts individual scores which can be averaged (mean or median) for an approximation of class progress. Finally, when the list is exhausted and children are used again, an indication of individual progress is also forthcoming by comparing new scores with old scores. Another way of collecting data is to record individual scores for every student participating in the instructional activity as well as total group average data.

A third advantage consists in the fact that behavioral objectives consultation forces teachers to become child-centered. The effects of instructional methods on children are continually being reflected in hard data. Moreover, during the present emphasis on accountability, such data reflect the extent to which teachers are, in fact, affecting children's learning. Thus, data not only could help to define areas in teaching methods which are weak and needing modification,but also can function as reinforcement to teachers where methods are working, and stand as proof to the critical taxpayer that the instructional efforts of individuals are resulting in some relevant behavioral changes.

CONSULTATION ANALYSIS

A coding system was developed in order to analyze the three interviews of the consultation process: Problem Identification, Problem Analysis, and Problem Evaluation. The analysis of the consultation process through the use of the coding system allows us to look more closely than in the past at the interaction between the psychologist and the change agent at the same time to validate the interviewing behaviors used in the consultation process by correlating measures of interviewing behaviors with criterion measures revealing the extent to which consultation goals have been achieved.

The coding format includes a coding unit defined as a verbal segment beginning when the psychologist commences speaking and ending when the teacher commences speaking. Another coding unit begins when the teacher commences speaking and ends when the psychologist commences speaking.

A list of definitions for each of forty-one interviewing behaviors was developed. These behaviors were derived from the classifications discussed earlier in this report. One major division in the coding behaviors is the distinction between elicitors and emitters. An elicitor is defined as any question or imperative statement calling for information. An emitter is any statement emitting information, often immediately following an elicitor.

We have hypothesized that the greater use of elicitors on the part of the psychologist will increase the likelihood of having a successful case. Conversely, the greater the use of emitters on the part of the psychologist will increase the likelihood of having an unsuccessful goal attainment. The reason for this latter assumption being that the teacher, not the psychologist, has the primary responsibility for collecting data and also implementing the modification procedures. She should, therefore, be actively involved in the development of the proceudres to be used.

There are six different elicitors that have thus far been specified. They are: Directional Elicitors, Exemplar Elicitors, Condition Elicitors, Procedure Elicitors, Interpretation Elicitors, and Validation Elicitors. Directional Elicitors elicit discussion and define the class of information to be discussed for any given segment of an interview. Exemplar Elicitors request specific examples of the content under discussion (behaviors, procedures, etc.). Condition Elicitors request information amplifying the conditions under which the behavior occurs: antecedent, consequent, situation, strength (amplitude, duration, frequency, latency, percentage). Procedure Elicitors call for examples of procedures in any of the content areas under discussion (problem identification, recording, teaching and intervention). Interpretation Elicitors request cause-and-effect inferences relating to any of the behavior or procedure categories. The last to be mentioned is the Validation Elicitor. Under this category are coded questions calling for agreement or disagreement (yes or no response usually) in any of the behavior or procedure categories.

Under the second major division, the emitters, are the following categories: Exemplar Emitters, Condition Emitters, Procedure Emitters, Interpretation Emitters, Validation Emitters, and Summarization Emitters. Exemplar Emitters refer to specific information (facts) that are emitted, often bearing on the content of an immediately preceding request (elicitor). Statements supplying information which specify the conditions under which a behavior occurs are labeled Conditions Emitters. Procedure Emitters refer to examples of procedures in any of the content areas. Interpretation Emitters are cause-and-effect inferences relating to any of the behavior or procedure categories. Validiation Emitters are positive or negative responses (yes or no) to an immediately preceding elicitor. Summarization Emitters are statements which review information emitted in response to elicitors at previous times during the interview.

In addition to the elicitor and emitter categories which have already been described, there is a category for Reinforcers, Verbal Statements Longer than Three Sentences, and one entitled Other. Any verbal praise occurring during the interview is coded in the Reinforcer category because of the desire to differentiate which one of the interview participants is dominating the majority of the interview statements. It is not enough to know what has been said but also the approximate length of each of the coding units. In the last category entitled Other are coded both procedural elicitors or emitters relating to the interview itself. In addition, any other verbalizations that cannot be placed in the above categories are placed here.

The procedure followed for coding the consultation interviews is to classify each coding unit into as many of the 41 categories as are applicable. Usually no more than three apply to any one unit. For example, suppose the psychologist says: "We need to obtain some information on the length of time that Timmy stays in committee. How would it be convenient for you to collect this information? Also, when during the day would you like to record? It is really not necessary to record continuously through-out the day since you mentioned that you are only concerned with his attendance in the math, writing and language centers." This unit would be coded as a Directional Recording Elicitor because the psychologist is introducing the entire area of recording... "We need to obtain some information on the length of time Timmy stays in the three centers." a recording Procedure Exemplar Elicitor because the change agent is requested to supply specific information about the recording process... "How would it be best for you to collect this information?" a Recording Procedure Elicitor because information as to when the recording will occur is requested... "Will it take place just in the morning, during every committee, or just when the aide is present to take data? What time during the day would you like to record?; and Other because this statement does not fit any of the other categories. The psychologist is giving information about the situations in which recording should occur... "It is really not necessary to record continuously throughout the day since you mentioned that you are only concerned with his attendance in the math, writing and language centers."

COMPUTER-BASED INFORMATION SYSTEM

The data for the TEEPS information system consists of two files: 1) the numerically coded information from each case, including demographic data, "problem" type, case status, who referred the case, elements of the modification plan, and information concerning the graph (child's behavior data record); and 2) an alphanumeric summary of the modification plan describing the details of the plan.

The numerical data are used to produce reports concerning the activities of TEEPS and also to retrieve the plans from the modification plan file. At the present time, the numerical data are stored on punched cards, but future plans include storing them on magnetic tape.

The cases arrive in Tucson in quarterly periods and are coded and keypunched accordingly. The file for one year, therefore, has all cases, grouped by communities for first quarter, together, followed by second quarter, etc. The organization does not matter so far as the programs are concerned, because each case is considered individually and contains information identifying the community and the quarter. The file organization facilitates the production of quarterly reports, if requested.

The modification plan file contains the case identification number followed by a complete, yet concise description of the procedures used to reach the case goal. When data are retrieved from this file, they are printed out exactly as they are on the file, except only those cases requested are retrieved. The purpose of the file is to provide psychologists with the specific details of procedures previously used from which they can develop ideas for their own cases; also, the file provides an excellent, accessible source of examples for training, or for demonstrating the TEEPS model.

By using the numerically coded file as an index, these plans can be retrieved on numerious "keys". For example: all procedures used to decrease aggressive behaviors; all procedures used to increase recognition of the letter of the alphabet; all procedures involving positive reinforcement; or those involving tokens as reinforcers; those having only partial success; procedures taking less than one week to achieve success, etc.

Users of the retrieval system are advised to keep in mind that the procedures retrieved are actually what has been done (and as reported) by the psychologists - therefore some procedures may be incompletely described, some may not be "TEEPS model." some may be outstanding in creativity, some may be simple. In other words, they are not "model" procedures, but actual, implemented procedures.

The plans are entered into the data bank by a two-step procedure: first, the plans, as described on the report forms, are summarized - including all information but omitting duplications, unnecessary verbs and descriptors, etc; then they are keypunched and read onto tapes. They are stored on tape in numerical (identification numbers) sequence, one plan directly following the last card of the previous one.

There is an index at the first of the tape containing the identification number of each plan on the file and the number of cards containing that plan (the length of plans vary from 2-30 cards). This index also contains the cross references for any duplicate plans. When two or more cases employ identical procedures, the plan is written only once and located under one of the identification numbers. Then the other case numbers direct the system to the number under which the plan can be found.

When retrieving modification plans, other information can be printed with them, if requested. For example, a user may request plan descriptions for all cases involving dishonesty and an indicator as to the success of the plan. The "case status", coded on the numerical file, indicates the success of a plan. The system can print this information along with the plan description.

The methods for retrieval and report generation are discussed in the following section on programming.

PROGRAMMING

There are two types of programs employed in the system: report generators and retrieval programs. All programs are written in FORTRAN IV and run on the University of Arizona Control Data Corporation 6400 Computer. At the present time, they are stored on punched cards, but future plans include storing the compiled programs on magnetic tape.

During the 1970-71 school year all reports were generated by one major program called QTYRPT (Quarterly Report). This program required 12-K core and ran for 20 cpu seconds. It was large and rather unwieldy, but it generated 15 separate full- or multiple-page reports with one pass-through the data. This year, there are more cases and the desired reports have been quadrupled, so the program QTYRPT has been rewritten into three separate programs. Each of these programs produce several reports, and each requires one pass through the data.

The programs all work on the same basis. A case is read from the data and each element of the case examined to ascertain its application to the various reports. Arrays containing the reports are kept in core throughout the run and the appropriate array-words are incremented or manipulated as an element to be included in them is considered. When the last case has been read and examined, the rows of the arrays are totaled (and the columns when applicable) and the totals stored in the last column, any manipulation of the data such as finding a median or mean is performed, and the arrays are printed with appropriate headings on the columns and rows. These headings are entered on punch-cards, for ease of alteration between runs, and read onto disk at the beginning of a run. Then they are read off the disk as they are printed. Each program produces several reports, so parameters are read at the beginning of the run to indicate which reports are desired.

A flowchart showing the general organization of these programs is on the following page (Figure 5).

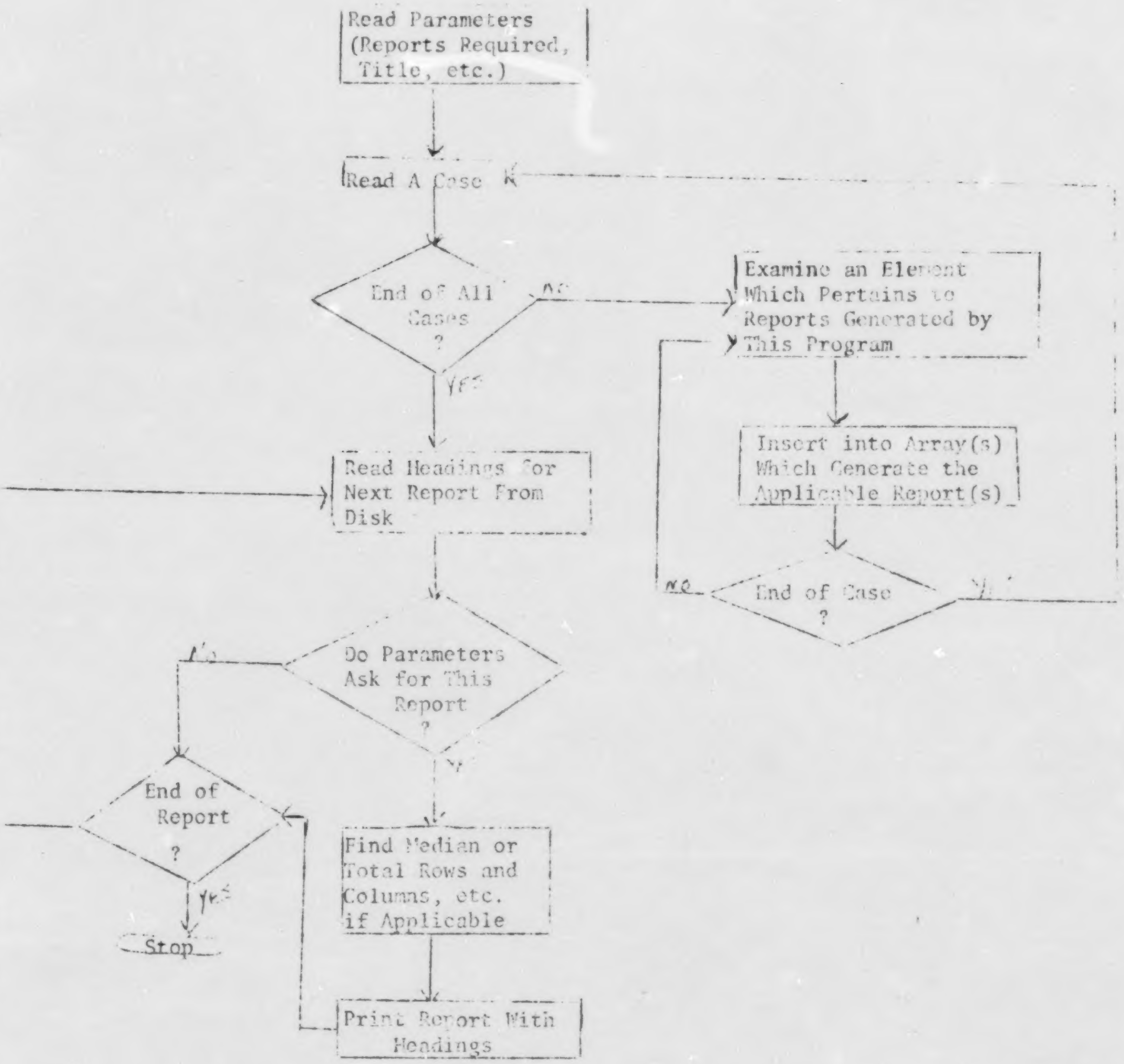
Read Parameters (Reports Required, Title, etc.)
Read A Case
End of All Cases ?
NO
YES
Examine an Element Which Pertains to Reports Generated by This Program
Insert into Array(s) Which Generate the Applicable Report(s)
End of Case ?
NO
YES
Read Headings for Next Report From Disk
Do Parameters Ask for This Report ?
NO
YES
End of Report ?
YES
Stop
Find Median or Total Rows and Columns, etc. if Applicable
Print Report With Headings

Figure 5: REPORT-GENERATING PROGRAMS

Other smaller programs are written as requests come to the system concerning information not included in these reports. Usually, after the initial request, the new information is worked into the larger programs. The same programs are stored on punch cards, and their listings are kept in a program file for any future requests of the same type. These small programs would be included in the program type "retrieval" programs.

The main retrieval program is used to retrieve modification plans from the data bank. It uses the numerical data as an index to locate the plans needed. A flowchart (Figure 6) indicating the procedure used by the program to retrieve plans follows on page 58.

The requests are read as parameters for the program. A parameter will indicate that the user wants all plans handling "dishonesty" cases or all plans used in the second grade to teach word recognition, etc. The program then reads the numerically coded cases one by one searching for codes matching the parameters. When a matching case is found, the identification number and any other desired information is stored. After all cases are read, the stored I.D. numbers are arranged in numerical order. Then the numbers are matched against the index (which was read off the modification plan tape). Until a match is made, each card-length (the index indicates the length of each plan with its I.D. number) is added to a "skip-length" which is used to indicate space between desired plans. For example, if the fifth plan is desired, the number of cards in each of plans 1, 2, 3 and 4 will be totaled to indicate the number of cards to be skipped in order to reach plan 5. After "skipping" (reading into dummy storage) the specified number of cards (from tape, actually) the plan will be printed,

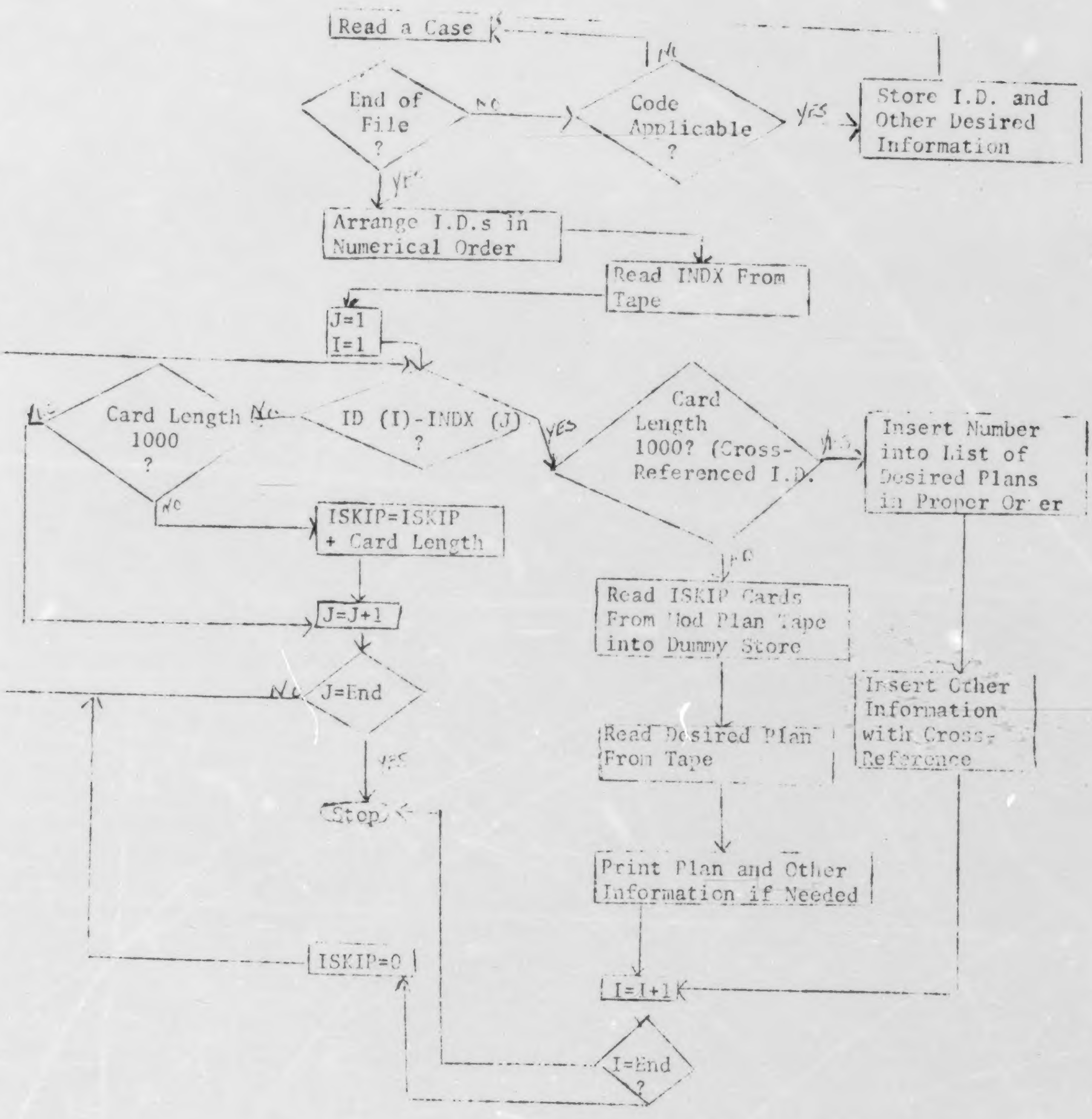
Read a Case
End of File ?
NO
Code Applicable ?
YES
Store I.D. and Other Desired Information
NO
YES
Arrange I.D.s in Numerical Order
Read INDX From Tape
J=1
I=1
Card Length 1000 ?
NO
ID (I)-INDX (J) ?
YES
Card Length 1000? (Cross-Referenced I.D.
YES
Insert Number into List of Desired Plans in Proper Order
NO
ISKIP=ISKIP + Card Length
NO
Read ISKIP Cards From Mod Plan Tape into Dummy Store
J=J+1
Insert Other Information with Cross-Reference
J=End
NO
Read Desired Plan From Tape
YES
Stop
Print Plan and Other Information if Needed
ISKIP=0
I=I+1
I=End ?

Figure 6: MODPLAN RETRIEVAL

and the index-searching, skipping, printing process will be repeated until all desired plans are printed.

When a plan has been duplicated and is cross-referenced in the index, the program will reach the desired I.D. number and not another I.D. number instead of number of cards. The identification number will be inserted in the list of desired plans in proper order. This means that for cross-referenced plans, the plan will be stored in the data bank under the largest I.D. number of the cases using that procedure.

The formats for the information were designed with the purpose of readability, including clear indication of the meaning of each element of a report. The reports are printed in array form with each element of a report clearly labeled so that the reader can readily identify the information contained in the report. Any individual requests serviced by the system are programmed to clearly identify the information retrieved, including any pertinent dates, labels, headings or numbers. In all reports, the communities are indicated by number rather than name, in order to allow one community to "compare" without direct competition and to insure security. Also, the children are identified only by an identification number, which has no "interpretation" but is assigned in a random fashion.

IMPLEMENTATION AND MAINTENANCE

TEEPS, being a developmental program, has implemented in the communities innovations as soon as they are constructed, in order to test their feasibility. The information system is no exception. Rather than follow the often recommended procedure of designing the complete system and then having one change over from old system to new, elements of the information system have been introduced as they are conceived. As a result, the report forms have changed several times - faults have been made evident as the forms are used and improvements have been sought immediately. The coding key has undergone numerous changes in an effort to facilitate coding, reporting, and data acquisition. As keys were implemented, their shorcomings were recognized. Also, programs have been rewritten several times to incorporate additional information needs, delete irrelevant reports, and utilize new coding keys, as these needs became evident during implementation.

Implementation has been a "casual" procedure, due to the organization-professionals all working together When a new coding key is needed, the entire Tucson staff has cooperated in its design; as a result, no formal training is needed before implementing it. When new forms have been created the psychologists are instructed in their use during community visits. The modification plan retrieval system was introduced during a mid-year conference, with written instructions and sample print-outs provided, and a general discussion between the users and designer.

The implementation appears to be successful. The system, as it was designed during the 1970-71 school year, produced an annual report on the activities and accomplishments of TEEPS which has received much praise - from Washington and the communities. Many individual questions were requested for the system to compile and retrieve information not included in the reports. The information was used to improve summer training, to locate areas of concentration in service to the psychologists, to aid instruction by professors of educational psychology at the University, and to locate needs for improving the information system itself.

The modification plan retrieval system was introduced in fall 1971, and to date has serviced 24 requests. The number of requests will greatly increase the next year because of the expanded contents of the data bank, and the growing familiarity with the system by the users. Not only have psychologists expressed interest in the retrieval program, but also teachers, school administrators, and others not involved with TEEPS.

Maintenance of the system is obviously a constant procedure. New forms, new coding methods, improved reports, expanding data bank, increasing varieties of requests coming into the system are all part of system maintenance. Programs are updated, or new ones written, with almost each new development in the system. The TEEPS information system has proved flexible almost to the point of irritation! But, as the system and TEEPS model develop and grow, they will also begin to stabalize and maintenance will be less frequent and demanding. But the intentions are for the information system to always remain flexible and ready to incorporate innovations of the professionals it services.

Figure 7 provides the basic operations of the Tucson Early Education Services Information System.

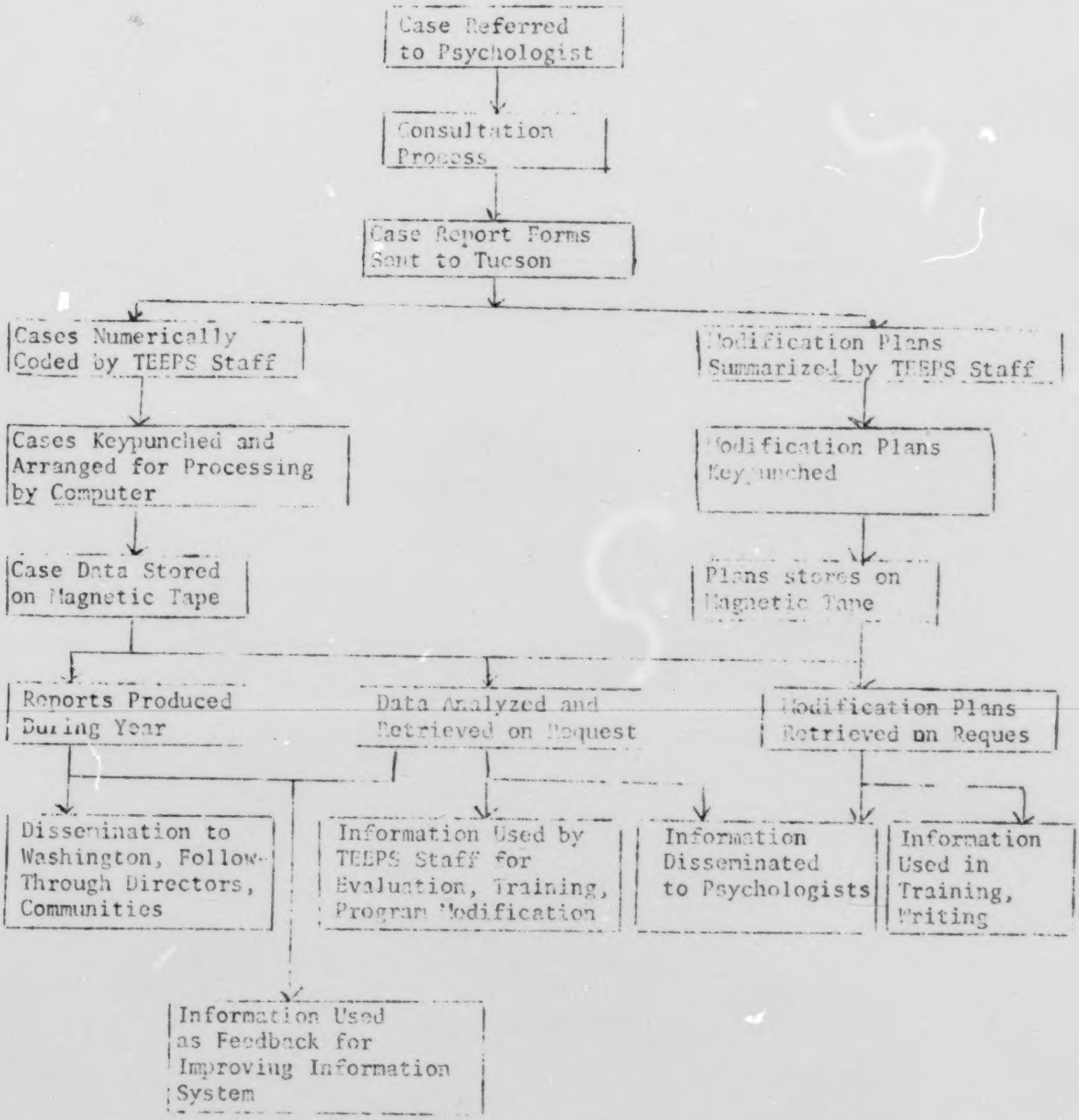
Case Referred to Psychologist
Consultation Process
Case Report Forms Sent to Tucson
Cases Numerically Coded by TEEPS Staff
Modification Plans Summarized by TEEPS Staff
Cases Keypunched and Arranged for Processing by Computer
Modification Plans Keypunched
Case Data Stored on Magnetic Tape
Plans stores on Magnetic Tape
Reports Produced During Year
Data Analyzed and Retrieved on Request
Modification Plans Retrieved on Reques
Dissemination to Washington, Follow-Through Directors, Communities
Information Used by TEEPS Staff for Evaluation, Training, Program Modification
Information Disseminated to Psychologists
Information Used in Training, Writing
Information Used as Feedback for Improving Information System

Figure 7: TUCSON EARLY EDUCATION PSYCHOLOGICAL SERVICES INFORMATION SYSTEM

EVALUATION

The final reporting of this past year's Psychological Services Component in TEEM will be discussed under the following areas: scope of services, program effectiveness, program acceptance, program efficiency, program implementation and behavioral objectives. Behavioral objectives data are being presented separately due to the fact that these cases were handled in a different manner. Therefore, they have not been counted in each community's total case count.

SCOPE OF SERVICES

Psychologist in the community. Although the central focus of TEEPS program implementation in the field is the consultation process, the psychologist performs many other services in the schools in order to implement the psychological services program effectively. For example, psychologists participate in pre-service and in-service sessions with school staff and parents. Informal services are often rendered to teachers and others with respect to problems which do not warrant a formal referral. The psychologist may also have duties not directly connected with the TEEPS program, such as SPI testing coordination and Federal project grant writing, and, in addition, may be called upon to implement the consultation process in non-Follow Through classrooms.

The information presented in Table 1 consists of representations of the amount of psychologist time relegated to the implementation of the TEEPS program and to other duties peculiar to the local situation. The information is relayed to the Center via informal communications and is, therefore, only approximate. The information is valuable in that it conveys the broad range of activities within which the psychologist is participating in the local community.

In reading Table 1 it should be pointed out that across communities there may be differences as to the proportion of time the psychologist is allocated to the TEEPS program by the local school district and also to the number of full or part-time psychologists employed.

PROGRAM ACCEPTANCE

In previous years the determination of program acceptance within communities was provided by data concerning the numbers of teachers and schools making referrals and by data which listed the source of referrals. Table 2 reports that information for the 1971-72 school year.

Table 3 presents the Referral Source as a second way of looking at program acceptance. The referral source for behavioral objectives cases is being reported separately. Of the 916 cases referred, the referral source for 901 was reported. A significant finding while making a comparison with the listings of referral source last year is the additional categories of sources, such as teacher's aides, medical doctor, baby sitter, and program director. Also there was the addition of several categories of combined sources, such as teacher, parent and parent involvement component; director and program assistant; principal and social worker; parent and social worker; teacher and social worker; child's teacher and other teacher; teacher and counselor; parent and pediatrician; teacher and principal; teacher and aide; teacher and program assistant.

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Tabel 1 Scope of Services

Community	1	2	4	5	6	7 *	8	9 *	10	11	12	13**	14
Consultation	70%	54%	70%	35%	35 35%	31%	65 65%	80%	10%	70%	90%		20%
SRI & Other Testing Coordination		10%	7%	3%	11 11%	31%	10 10%						2%
Informal Sercies to Teachers Parents and Colleagues	20%	20%	15%	5%	25 25%	20%	20 20%	10%	70%	50%	5%		74%
Pre & In-Service Workshops	10%	5%	5%	2%	5 5%	2%	5 5%	5%	1%	10%	5%		2%
Grant Writing - Federal Projects			1%		1% 1%	1%		5%	15%	5%			1%
Director of Special Education or other Non-Follow Through Position						31%							
Non-Follow Through Psychologist									1%	5%			
Non-Follow Through Consultation (e.g., Head Start)		20%		5%	15 15%	15%			4%				1%
Principal of Special Education Building	0	0	0	0	0 0	0	0 0	0	0	0	0		0
Other			2%										
Parent Workshop										5%			
Laison Activities					5 5%								
Evaluation Activities					3 3%								

* Indicates communities in which the psychologist worked 1/2 time or less

** No information available on Scope of Services

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Table 2 Program Acceptance

Community	1	2	4	5	5	7	8	9	10	11	13	13	14	Totals
No. Follow Through Classrooms	31	21	56	7	32	6	27	9	13	31	27	18	14	294
No. Follow Through Classrooms Referring Cases	16	17	35	7	26	6	22	6	9	25	26	1	1	197
No. Follow Through Classrooms Referring More than One Case	7	11	33	6	23	6	14	5	5	20	25	0	1	147
No. Follow Through Schools	7	5	6	1	4	1	7	1	4	4	4	4	4	52
No. Follow Through School Referring More Than One Case	5	6	6	2	5	1	7	1	6	4	6	0	1	50

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Table 3 Referral Source

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Number of Cases Reporting Referral Source	41	72	98	45	202	50	72	31	39	106	139	2	4	901
Child's Teacher	34	58	93	33	123	35	43	30	33	69	132	2	3	689
Other Teacher	0	2	0	0	13	0	10	0	0	1	0	0	0	26
Principal	0	3	0	1	19	2	4	0	1	11	0	0	0	41
Program Assistant	0	0	0	0	0	0	1	1	0	5	0	0	0	7
Parent	1	1	0	5	4	2	5	0	2	16	0	0	0	36
Psychologist	0	0	0	1	1	1	1	0	0	0	0	0	0	4
Social Worker	0	0	0	2	5	0	0	0	0	0	0	0	0	7
Counselor	0	0	4	1	0	0	0	0	0	0	0	0	0	5
Teacher Aide	0	0	0	0	0	1	3	0	0	1	3	0	0	8
Nurse	3	2	0	0	0	1	0	0	0	0	0	0	0	6
Teacher and Teacher Aide	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Teacher and Program Assistant	2	1	0	0	13	0	0	0	0	3	0	0	0	19
Teacher and Principal	1	4	0	0	8	6	3	0	1	0	1	0	0	24
Medical Doctor	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Teacher and Parent	0	0	0	0	3	0	2	0	0	0	2	0	1	8
Parent and Pediatrician	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Teacher and Counselor	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Babysitter	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Program Director	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Child's Teacher and Other Teacher	0	0	0	0	5	0	0	0	0	0	0	0	0	5
Teacher and Social Worker	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Parent and Social Worker	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Principal and Social Worker	0	0	0	0	1	0	0	0	0	0	0	0	0	1

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Table 3 (cont.)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Director and Program Assistant	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Teacher, Parent and Parent Involvement	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Referral Source For Behavioral Objectives Cases														
Child's Teacher	2	0	1	0	1	0	33	0	0	0	3	0	0	40
Program Assistant	0	0	0	0	0	0	3	0	0	6	0	0	0	9
Teacher Aide	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Teacher and Program Assistant	0	0	0	0	0	0	0	5	0	0	0	0	0	5

Although in some of the above categories the instances of referral from the source were as low as 1, the percentage of cases referred from these new sources was 7%.

Some of the increase or broadening of contacts by the psychologist may be attributed to the usual word-of-mouth information generated from successful cases as well as services having been rendered, while it may also be indicative of the widely spreading knowledge of the services the psychologist can provide imparted by pre-service and in-service workshops for teachers, administrators and parents and/or by the psychologist's participation in other TEEM activities. The increase of dual referrals is descriptive of the system whereby only one individual participates in the PII, even though two individuals were instrumental in initiating the referral.

The greatest number of referrals continues to be generated by the classroom teacher (76% of all referrals) which would be expected as these change agents are the persons with whom children are more frequently in contact. Such is also the case with behavioral objectives case referrals where teachers made the initial contact. However, 16% of the cases were referred by program assistants.

There was also an increase of referrals (from 2% to 4%) from the previous year made by other personnel from the TEEM model such as program assistant and program director.

PROGRAM EFFECTIVENESS

Table 4 which demonstrates statistically the effect that Psychological Services brought to bear on referred cases during the 1971-72 school year is being reported as the Status of Cases Upon Termination. The Behavioral Objectives case status data is being reported separately. The alterations in coding designed during the last year allowed for more comprehensive reporting of effectiveness in terms of the extent to which the consultation process was expedited. For example, in some cases the problem was never defined specifically, or a problem identification interview did not take place. Under the categories No PII, Plan not Implemented, Goal Attained, Goal Partially Attained, No Progress Made on Goal are listed the explanation of status at the time of termination.

There is a noticeable increase (1% for 1971-72 to 41% this past year) in the percentage of cases which were classified under Testing, Staffing, etc., and for which the consultation process was not initiated (No Problem Identification Interview). The increase of reported cases occurred as a result of a change of policy in the Information System whereby the psychologist reported all cases for which a referral for their services had been made regardless of whether it was intended for the consultation process to be undertaken. Referrals for testing, staffing, etc., which heretofore had been undertaken but not reported were not included in previous years. The rationale for the change of policy was to provide a more comprehensive picture of how the psychologist was servicing the schools beyond the application of the consultation process. Having the information enables communities to evaluate the outcome of their activities so as to make decisions with regard to priorities for service.

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Table 4 Status of Cases Upon Termination

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Number of Cases	41	72	103	49	202	50	72	31	39	107	143	2	5	916
Number of Cases for Which No Status Reported														2
No Problem Identification Interview														
Behavior Improved without Intervention	7	0	1	1	6	1	0	0	0	1	0	0	0	17
Percent	.17	0.00	.01	.02	.03	.02	0.00	0.00	0.00	.01	0.00	0.00	0.00	.02
Change Agent Decision	4	0	3	1	15	7	2	0	0	0	1	0	0	33
Percent	.10	0.00	.03	.02	.07	.14	.03	0.00	0.00	0.00	.01	0.00	0.00	.04
Child Moved From Class	1	0	0	0	5	0	0	0	0	0	0	0	0	6
Percent	.02	0.00	0.00	0.00	.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.01
Referred To Other Services	12	2	8	0	4	0	4	0	2	0	0	0	0	32
Percent	.29	.03	.08	0.00	.02	0.00	.06	0.00	.05	0.00	0.00	0.00	0.00	.03
Irregular School Attendance	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Percent	02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.00
School Year Ended	3	0	3	0	14	2	0	0	0	0	0	0	0	22
Percent	.07	[illegible]	.03	0.00	.07	.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.02
Testing, Staffing Evaluation or Consultation	4	36	70	14	133	5	35	10	37	32	0	0	1	377
Percent	.10	.50	.68	.29	.66	.10	.49	.32	.95	.30	0.00	0.00	.20	.41
Plan Not Implemented														
Behavior Improved Without Intervention	2	1	0	1	1	0	4	6	0	4	16	0	0	35
Percent	.05	.01	0.00	.02	.00	0.00	.06	.19	0.00	.04	.11	0.00	0.00	.04

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Table 4 (cont.)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Change Agent Decision	0	2	0	7	0	3	5	3	0	1	36	0	0	53
Percent	0.00	.03	0.00	.06	0.00	.06	.07	.10	0.00	.01	.25	0.00	0.00	.06
Child Moved From Class	1	2	0	0	2	1	0	0	0	0	8	0	0	14
Percent	.02	.03	0.00	0.00	.01	.02	0.00	0.00	0.00	0.00	.06	0.00	0.00	.02
Referred To Other Services	1	0	0	0	0	0	1	0	0	1	2	0	0	5
Percent	.02	0.00	0.00	0.00	0.00	0.00	.01	0.00	0.00	.01	.01	0.00	0.00	.01
Irregular School Attendance	0	1	0	0	0	0	0	0	0	0	1	0	0	2
Percent	0.00	.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.01	0.00	0.00	.00
School Year Ended	0	0	0	0	0	0	0	0	0	0	7	0	0	7
Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.05	0.00	0.00	.01
Revised Goal Strength or Change of Goal	0	00	0	0	0	0	0	0	00	1	0	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.01	0.00	0.00	0.00	.00
Testing, Staffing Evaluation, or Consultation	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.06	0.00	0.00	0.00	0.00	0.00	.00
Goal Attained														
Plan Successfull	4	19	10	20	9	23	17	9	0	58	57	2	3	231
Percent	.10	.26	.10	.41	.04	.46	.24	.29	0.00	.54	.40	1.00	.60	.25
Goal Partially Attained														
Plan Not Affecting Behavior as Desired	0	1	2	0	0	2	0	0	0	1	1	0	0	7
Percent	0.00	.01	.02	0.00	0.00	.04	0.00	0.00	0.00	.01	.01	0.00	0.00	.01
Change Agent Decision	0	2	3	5	5	0	1	0	0	3	2	0	1	22
Percent	0.00	.03	.03	.10	.02	0.00	.01	0.00	0.00	.03	.01	0.00	.20	.02

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Table 4 (cont.)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Child Moved From Class	0	0	0	0	0	4	0	0	0	1	3	0	0	8
Percent	0.00	0.00	0.00	0.00	0.00	.08	0.00	0.00	0.00	.01	.02	0.00	0.00	.01
Referred To Other Services	0	0	0	0	1	0	0	0	0	1	0	0	0	2
Percent	0.00	0.00	0.00	0.00	.00	0.00	0.00	0.00	0.00	.01	0.00	0.00	0.00	.00
Irregular School Attendance	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.00
School Year Ended	1	3	3	0	3	1	2	0	0	1	7	0	0	21
Percent	.02	.04	.03	0.00	.01	.02	.03	0.00	0.00	.01	.05	0.00	0.00	.02
Revised Goal Strength or Change of Goal	0	1	0	0	0	0	0	1	0	1	2	0	0	5
Percent	0.00	.01	0.00	0.00	0.00	0.00	0.00	.03	0.00	.01	.01	0.00	0.00	.01
No Progress Made Toward Goal														
Plan Not Affecting Behavior As Desired	0	0	0	1	1	0	0	0	0	0	0	0	0	2
Percent	0.00	0.00	0.00	.02	.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.00
Change Agent Decision	0	2	0	1	0	0	1	0	0	0	0	0	0	4
Percent	0.00	.03	0.00	.02	0.00	0.00	.01	0.00	0.00	0.00	0.00	0.00	0.00	.00
Child Moved From Class	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Percent	0.00	0.00	0.00	0.00	.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.00
Status Of Behavioral Objectives Cases Upon Termination														
Number of Cases	2	0	1	0	4	0	39	5	0	34	4	0	0	89

Table 4 (cont.)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
No Problem Identification Interview														
Change Agent Decision	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	0.00	.03	0.00	0.00	0.00	0.00	0.00	0.00	.01
Testing, Staffing Evaluation Or Consultation	0	0	0	0	1	0	1	0	0	0	0	0	0	2
Percent	0.00	0.00	0.00	0.00	.25	0.00	.03	0.00	0.00	0.00	0.00	0.00	0.00	.02
Plan Not Implemented														
Change Agent Decision	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.25	0.00	0.00	.01
Goal Attained														
Plan Successful	2	0	0	0	2	0	24	4	0	24	1	0	0	57
Percent	1.00	0.00	0.00	0.00	.50	0.00	.62	.80	0.00	.71	.25	0.00	0.00	.64
Goal Partially Attained														
Plan Not Affecting Behavior As Desired	0	0	0	0	1	0	1	0	0	0	0	0	0	2
Percent	0.00	0.00	0.00	0.00	.25	0.00	.03	0.00	0.00	0.00	0.00	0.00	0.00	.02
Change Agent Decision	0	0	0	0	0	0	4	0	0	0	0	0	0	4
Percent	0.00	0.00	0.00	0.00	0.00	0.00	.10	0.00	0.00	0.00	0.00	0.00	0.00	.04
Child Moved From Class	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	0.00	.03	0.00	0.00	0.00	0.00	0.00	0.00	.01
School Year Ended	0	0	1	0	0	0	5	0	0	10	2	0	0	18
Percent	0.00	0.00	1.00	0.00	0.00	0.00	.13	0.00	0.00	.29	.50	0.00	0.00	.20
Revised Goal Strength Or Change Of Goal	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	0.00	.03	0.00	0.00	0.00	0.00	0.00	0.00	.01

Table 4 (cont.)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
No Progress Made Toward Goal														
Plan Not Affecting Behavior As Desired	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	0.00	.03	0.00	0.00	0.00	0.00	0.00	0.00	.01
Change Agent Decision	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.20	0.00	0.00	0.00	0.00	0.00	.01

There were four communities for which over 50% of the cases being referred were cases which had a status of Testing, Staffing, etc., upon termination. Of the total cases referred in six communities the highest percentage of their status profile reached Goal Attained. Of the 840 total cases referred in all communities 41% fell into the testing category with No Problem Identification Interview. This would seem to indicate that at least for some communities the psychologist is still called upon to fill a traditional role of diagnostician. However, for other communities, through the use of numerous communication channels (i.e., workshops) the trend is toward a less traditional role for the psychologist. In 32% of the cases referred, the consultation process was initiated and a behavior change resulted.

Last year information regarding the cases which were terminated before any plan of intervention was put into effect or had even been specified but for which the behavior had improved was reported. This year under No Problem Identification Interview (behavior improved without intervention) there were a total of 17 cases and under Plan Not Implemented (behavior improved without intervention) there were 35. Together these two categories reflect only 6% of the total cases referred for all communities, whereas last year the percentage of cases which were identified as the behavior being improved without intervention was 13. It was previously hypothesized that such decisions were reached when the change agent may have overestimated the extent of the problem and, after collecting baseline data, reached the conclusion that the behavior was not as much of a problem as it was originally thought to be. Possibly the very process of specifying a particular behavior and collecting data may have altered the change agent's reaction to the child and his behavior and therefore could have acted to modify the target behavior. Other possible explanations might be that the act of recording could function to encourage the child to change his behavior. For example, if a child was included in the plan in that he was informed of the level of his baseline performance, he might react by changing his behavior to immediately remove the aversive stimuli of the numerous tallies. Therefore, there would be no need to proceed with the installation of the modification plan. A final possibility is that as the time the behavior was recorded existing controlling stimuli were operating upon the behavior and the record accurately reflects the problem being resolved. Often there was data to substantiate that the behavior had improved so that further explanation of the case status was not obtained; therefore, the above speculations remain just that. Whichever, the main concern for evaluation is that the behavior has improved.

Table 5 indicates Successful Status by Case Type and does not include cases for which no problem identification or analysis interview was undertaken. Successful completion of a case is no longer being reported entirely on the basis of behavioral change, as was the case for the previous year, but includes information as to the type of case having been serviced.

A new classification system was designed to reflect the above change and is discussed in the section dealing with the Implementation of TEEPS in this report. The new categories are Adjustment and Academic (Target Conditions or Mediational Skills). Of the 245 total cases reported in this table, 177 fell into the category of Adjustment. The data was further broken down to demonstrate that 94% of these reached Goal Attainment with the remainder falling under Partial Attainment or No Progress Toward Goal. This illustrates that

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Table 5 Successful Status By Case Type

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Adjustment	2	14	3	14	10	15	17	7	0	37	54	1	3	177
Goal Attained	2	12	3	13	9	13	17	7	0	36	51	1	3	167
Percent	1.00	.86	1.00	.93	.90	.87	1.00	1.00	0.00	.97	.94	.50	1.00	.94
Goal Partially Attained														
Plan Not Affecting Behavior As Desired	0	1	0	0	0	2	0	0	0	0	1	0	0	4
Percent	0.00	.07	0.00	0.00	0.00	.13	0.00	0.00	0.00	0.00	.02	0.00	0.00	.02
Revised Goal Strength Or Goal Change	0	1	0	0	0	0	0	0	0	1	2	0	0	4
Percent	0.00	.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.03	.04	0.00	0.00	.02
No Progress Toward Goal														
Plan Not Affecting Behavior As Desired	0	0	0	1	1	0	0	0	0	0	0	0	0	2
Percent	0.00	0.00	0.00	.07	.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.01
Academic - Target Conditions	1	7	9	7	0	9	0	0	0	6	3	0	0	42
Goal Attained	1	7	7	7	0	9	0	0	0	6	3	0	0	40
Percent	1.00	1.00	.78	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	.95
Goal Partially Attained														
Plan Not Affecting Behavior As Desired	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Percent	0.00	0.00	.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.05
Academic - Mediational Skills	1	0	0	0	0	1	0	3	0	17	3	1	0	26
Goal Attained	1	0	0	0	0	1	0	2	0	16	2	1	0	23
Percent	1.00	0.00	0.00	0.00	0.00	1.00	0.00	.67	0.00	.94	.67	.50	0.00	.88

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Table 5 (cont.)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Goal Partially Attained														
Plan Not Affecting Behavior As Desired	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.06	0.00	0.00	0.00	.04
Revised Goal Strength Or Goal Change	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.33	0.00	0.00	.33	0.00	0.00	.08

when the consultation process was carried out for adjustment cases there was a high level of success in bringing about the desired behavior change.

When the consultation process is undertaken in a behavioral objective case the ultimate goal is not to bring about desireable change in behavior already in existence, such as in adjustment case referrals, but the change is analogous to that desired for mediational skill training cases for which which efforts are being extended to bring about the learning of a new behavior. The hierarchies for task analysis and subgoals of behavioral objectives may be very similar. The difference between a mediational skill training case and behavioral objectives case could be determined by the number of students involved (usually only one for a mediational skill training case) and the issue that behavioral objectives goals are directly related to idenfied program or curriculum goals (whereas the desired performance in mediational skill training cases had been identified in relation to an individual child).

Perhaps the only operational difference between the two would be in baseline data collection. For mediational skill training cases baseline data is the performance of the goal behavior by the child under existing teaching procedures whereas baseline data for behavioral objectives case would be the performance on a pre-assessment instrument designed to assess the criterion behavior identified by the specification of the behavioral objective.

For those cases referred as behavioral objectives, the status data is reported on the lower part of Table 4. Of the 89 objectives identified, the specified goal level was attained in 64%, while 20% of the cases had only partial attainment because of the end of the school year.

For cases designated as being Academic with target conditions or environmental change being made to bring about behavioral change, Goal Attainment was reached in 95% of such cases. For Mediational Skills training procedures the success [illegible] was 88%.

Cases without behavior change. In Table 5 only two cases were reported as making No Progress Toward Goal (Adjustment) with another five cases reported in Table 4 under the subheading of Change Agent Decision (4) and Child Moved From Class (1). This year's data tends to reflect far less cases in which an attempt was made to alter behavior without success. Table 5 does not include status for behavioral objectives cases.

EFFICIENCY OF THE PSYCHOLOGICAL SERVICES COMPONENT

When evaluating the efficiency of TEEPS, there are two aspects which should be taken into consideration: the efficiency of the TEEPS personnel in servicing the schools and the efficiency of the consultation process in bringing about the desired behavioral change.

Service to Schools. In previous reports the total number of cases was indicated as presenting serious drawbacks to describing or providing a measure of efficiency of TEEPS. Because the community psychologist engaged in a wide range of activities, some which were unique in specific communities and/or outside of those directly connected with case referrals, total cases serviced was somewhat unproductive.

Descriptive: Table 6 provides the data for psychologists' contacts for all cases referred to psychological services. As would be expected, communities Nos. 6 and 8, which have more than one psychologist, have the largest number of total conferences. Community No. 12, although having only one psychologist who did spend the greatest part of the time using the consultation process, also had a high number of conferences as well as a high number of cases. Community No. 11's high number of parent contacts is a reflection of the active parent program carried out by the psychologist within TEEPS.

Other factors also contributed to the number of conferences the psychologists in all communities might have with regard to a particular case. There were situations unique to the various communities and to specific cases, such as the availability of the change agents for interviews, number of people involved in a particular case, location of the schools, degree of teacher or change agent supportive actions and the amount of time the psychologist spent in the classroom. Certainly the data from Table 6 suggest that the psychologist is spending more time in the classroom than the traditional school psychologist. In this way the psychologist becomes known for being readily available to provide necessary service.

Additional time not reflected in these data was obviously devoted to travel to and from conferences, time spent scheduling conferences, time spent recording and reporting data, time spent preparing case reports for sending to the Arizona Center and time spent in planning.

An issue related to efficiency is that which pertains to the people who were directly involved in the analysis and modification of the cases served. Table 6 presents the relevant data. As can be noted, the person most often involved was the teacher of the child referred. Although the philosophy and referral procedures of the TEEPS allow for a referral to be made by any concerned person, most of the referrals received by the communities reporting were initiated by the teacher. In the same vein, the data also provides an interesting comparison to the previous year's figures. The percentages of total conferences with or in which the program assistant participated for the previous year (1970-71) was only 5%, while the percentage for this year (1971-72) increased to 11%. In communities Nos. 1, 4, 6, 8, 10 and 11 there were proportionately high numbers of contacts with program assistants.

The next most involved person in the implementation of the TEEPS was the child himself. For a case to report direct involvement of the child one of three situations existed: one, that the child was directly observed in the classroom or other relevant situation by the psychologist. Two, the child participated in one or more of the conferences conducted by the psychologist. In most cases in which this occurred the child was included in the problem analysis interview at which time he was encouraged to participate in the formulation of the modification plan, or the plan was explained to him and his cooperation enlisted. In nearly all cases that the child was informed of the plan, it was counted as a contact only if the psychologist was the one who provided the explanation. Third, the psychologist worked directly with the child either in a testing situtation or engaged in skill training instruction with the child.

The average number of conferences per case for the 1971-72 year was 5.5 whereas the average number for the previous year was 8.5. The possible reasoning which could explain such a significant reduction in the number of contacts per case could be the increase in the number of cases reported for referral for testing, etc., in which the consultation process was not applied and which would require only a minimum of contacts. On the other hand, it

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Table 6 Psychologists Contacts (excluding Behavioral Objectives Cases)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Number of Cases Reporting Contacts	40	71	103	48	200	50	71	30	39	105	143	2	4	906
Minimum Conferences Per Case	2	1	1	1	1	2	3	1	2	1	1	3	2	1
Maximum Conferences Per Case	71	33	17	13	33	43	34	15	12	13	14	6	7	71
Total Conferences **	346	374	419	217	994	500	724	132	216	485	519	9	17	4952
Teacher Contacts *	229	161	206	127	631	183	279	88	188	370	534	6	9	3011
Principal Contacts	6	7	7	16	157	4	93	11	11	25	1	0	0	338
Parent Contacts	5	25	14	23	88	26	39	1	9	110	3	1	3	347
Program Assistant Contacts	63	2	67	3	122	1	77	26	81	81	5	1	2	531
Counselor Contacts	0	0	119	3	10	0	0	0	0	15	0	0	0	147
Parent Involvement Contacts	39	0	0	1	15	0	13	0	0	1	0	0	0	69
Child Contacts	108	168	92	41	338	250	139	2	10	208	0	1	3	1360
Teacher Aide Contacts	32	10	2	65	28	37	54	4	4	24	12	3	3	278
Field Representative Contacts	8	0	0	3	1	0	20	0	0	2	0	0	0	34
Social Worker Contacts	1	0	1	5	59	1	1	1	0	22	4	0	0	95
Other Contacts	40	16	18	15	106	5	49	1	32	31	2	0	0	315

* Contact is an individual within a conference

** Conference may represent several contacts with one or more individuals present

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Table 6 (cont.) Psychologists Contacts (Behavioral Objectives Cases Only)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Number of Cases Reporting Contacts	2	0	1	0	4	0	39	5	0	34	4	0	0	89
Minimum Conferences Per Case	6	0	5	0	2	0	3	4	0	3	2	0	0	2
Maximum Conferences Per Case	7	0	5	0	15	0	39	12	0	6	15	0	0	39
Total Conferences	13	0	5	0	23	0	595	44	0	112	21	0	0	813
Teacher Contacts	8	0	5	0	14	0	354	22	0	60	21	0	0	484
Principal Contacts	0	0	0	0	3	0	56	0	0	0	0	0	0	59
Parent Contacts	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Program Assistant Contacts	0	0	0	0	1	0	101	22	0	30	0	0	0	204
Counselor Contacts	0	0	0	0	7	0	0	0	0	0	0	0	0	7
Child Contacts	11	0	0	0	4	0	41	0	0	0	0	0	0	56
Teacher Aide Contacts	0	0	0	0	0	0	45	0	0	0	0	0	0	45
Field Representative Contacts	0	0	0	0	0	0	35	0	0	0	0	0	0	35
Other Contacts	0	0	0	0	4	0	2	0	0	0	0	0	0	6

could reflect an increase in the efficiency level of psychologists operating within the TEEPS. The contact data for behavioral objectives cases (Table 6) reflects a close working relationship between psychologists and program assistants in planning for behavioral objectives cases.

Consultation Process. Table 7 presents the contact data for those referred cases other than behavioral objectives cases for which the consultation process was carried out and the goal was either fully or partially attained or no progress was made toward the goal. Behavioral objectives cases were not included as the data was a duplication of that portion of Table 6 dealing with that type of case. Again, as demonstrated in Table 6, Psychologist Contacts (for all cases referred), there was a high number of contacts with the program assistant. Table 7 also gives indication as to those specific communities in which there are proportionately high participation by the program assistant in the case process (Nos. 1, 4, 6, 8, 9, and 11).

There were four communities (Nos. 2, 6, 7, and 8) which had at least one case with a large number of contacts being made by the psychologist. A closer check on the nature of the case revealed that in two of the communities the psychologist did the intellectual skill training, while in another community the psychologist had a high number of child observations, and in still another the case extended over a long period of time until the goal or behavior change was finally attained. These high maximum number of contacts quite possibly were a factor in obtaining fairly high average per case contact figures. In at least six of the communities reporting contact data when using the consultation process the average number per case was less than 6. In

Table 7 Psychologists Contacts - Model Cases

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Number of Cases Reporting Contacts	9	33	18	31	24	35	31	21	0	72	142	2	4	422
Minimum Conferences Per Case	2	2	3	2	3	2	3	2	0	2	1	3	2	1
Maximum Conferences Per Case	16	33	17	8	33	43	34	15	0	18	14	6	7	43
Total Conferences	67	270	137	124	190	428	370	119	0	396	516	9	17	2642
Teacher Contacts	54	117	103	106	119	144	171	80	0	314	531	6	9	1754
Principal Contacts	5	5	7	0	15	4	32	9	0	12	1	0	0	90
Parent Contacts	2	10	4	5	10	26	21	0	0	91	3	1	3	176
Program Assistant Contacts	24	2	26	1	29	1	33	25	0	60	5	1	2	209
Counselor Contacts	0	0	31	0	3	0	0	0	0	4	0	0	0	38
Parent Involvement Contacts	9	0	0	1	0	0	7	0	0	1	0	0	0	18
Child Contacts	26	128	16	3	45	214	58	1	0	197	0	1	3	692
Teacher Aide Contacts	10	10	2	64	11	36	33	4	0	23	12	3	3	211
Field Representative Contacts	3	0	0	3	1	0	14	0	0	1	0	0	0	22
Social Worker Contacts	0	0	1	0	5	1	1	1	0	9	4	0	0	22
Other Contacts	3	7	3	7	28	5	7	1	0	11	2	0	0	74

community No. 12, the psychologist carried out the consultation process with 137 cases with an average of 3.7 contacts per case, a remarkably efficient use of time.

Case Processing Time. It should be noted when reading the tables which include time data that the numerals represent calendar days and not school days so that weekends, vacations and holidays were also included in the count. The tables being presented under Case Processing Time exclude those cases in which the consultation process was not utilized because the target behavior in those cases was not identified.

An additional aspect of program efficiency that was considered this year was the amount of time it took to process a case as well as the amount of time a teacher waited for an interview after the initial referral was made (Table 8).

In all but two communities the number of days until a teacher received service from the psychologist was less than a week and in many communities there were cases which received service on the day of referral. The several instances in which the referral source waited the maximum number of days for the first interview could be due to vactions being included in the count. The medians listed were reported in an effort to determine whether the high number of days was typical or whether a single case affected the data. In most communities the latter seems to be the case. For behavioral objectives, the teacher received services on the same day the case was referred.

Table 9 gives the overall picture of the minimum and maximum number of days to process a case as well as the median number of days. As a result of the assumption that skill training cases and behavioral objectives cases would take longer to process because of the training which might take place

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Table 8 Time - From Referral to PII

[illegible]	1	2	4	5	6	7	8		10	11	12	13	14	TOTAL
Adjustment	3	16	3	12	10	15	[illegible]	7	0	37	31	1	3	123
Minimum	13	0	4	0	0	0	3	0	0	0		0	0	4
Maximum	23	15	11	[illegible]	37	24	12	7	0	21	1	0	[illegible]	1
Median	15.0	1.0	7.0	0.0	7.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0
Academic - Target Conditions	1	7	14	7	2	10	1	0	0	7	3		0	48
Minimum	49	0	0	[illegible]	5	0	5	0	0	0	14	0	0	5
Maximum	49	7	11	2	7	12	5	0	0	7	14	0	0	49
Median	49.0	7.0	3.0	0.0	6.0	1.0	5.0	0.0	0.0	0.0	14.0	0.0	0.0	5.0
Mediational Skills	1	0	0	0	0	3	0	3	0	17	5	1	0	23
Minimum	7	0	0	0	0	1	0	0	0	0	0	0	0	1
Maximum	7	0	0	0	0	8	0	49	0	7	5	0	[illegible]	49
Median	7.0	0.0	0.0	0.0	0.0	1.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	1.0
Behavioral Objectives														
Adjustment	0	0	0	0	2	0	1	0	0	3	0	0	0	6
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Academic	2	0	1	0	0	0	30	4	0	31	3	0	0	71
Minimum	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum	25	0	0	0	0	0	50	0	0	0	0	[illegible]	0	50
Median	12.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

for numerous subgoals, the information was broken down according to the type of case being processed. In community No. 11, where all three types of cases were handled to conculsion, such was the finding because mediational skills had a higher median number of days. However, the same analysis could not be made for three other communities. This data is difficult to evaluate because of the number of non-working days being counted and the other variables, such as inaccessibility of teachers. It can be useful data for the individual community psychologist in making decisions as to the procedure being followed in getting interviews set, etc. There is indication that high numbers for maximum days from referral to problem identification interview did cause the numbers for maximum days from referral to closing to be higher. The medians in Table 9 serve to indicate which data includes isolated cases with a high number of days.

PROGRAM IMPLEMENTATION

In the previous year's report (1970-71), the case referrals were reported according to the content of the behavior. For this past year's report (1971-72), a new classification system was designed which would visually indicate what analysis was undertaken (behavioral objectives or analytic case), the type of analysis undertaken (adjustment or task skills) and the type of procedures (target conditions or mediational skills) used to bring about behavioral change. Table 10 presents the implemetation data in the format of the new classification system for all types of cases, including those not having utilized the consultation process. Table 10 provides an excellent description of the types of cases most often referred in each community and may give some

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Table 9 Time - From Referral to Closing

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Adjustment	3	16	3	12	10	15	18	7	0	37	61	1	3	186
Minimum	82	17	43	7	14	9	19	12	0	0	5	37	21	5
Maximum	221	62	74	51	195	60	76	63	0	21[illegible]	217	37	73	221
Median	139.0	38.5	66.0	28.0	74.5	23.0	31.0	28.0	0.0	61.0	84.0	37.0	28.0	37.7
Academic - Target Conditions	1	7	10	7	2	10	1	0	0	7	3	0	0	48
Minimum	126	42	20	11	60	20	202	0	0	44	136	0	0	11
Maximum	126	69	126	129	195	204	202	0	0	151	146	0	0	204
Median	126.0	42.0	59.0	65.0	127.5	51.0	202.0	0.0	0.0	91.0	142.0	0.0	0.0	91.0
Academic- Mediational Skills	1	0	0	0	0	3	0	3	0	17	5	1	0	2[illegible]
Minimum	128	0	0	0	0	14	0	63	0	33	23	42	0	14
Maximum	128	0	0	0	0	43	0	126	0	17[illegible]	209	42	0	209
Median	128.0	0.0	0.0	0.0	0.0	35.0	0.0	126.0	0.0	113.0	73.0	0.0	0.0	118.0
Behavioral Objectives														
Adjustment	0	0	0	0	2	0	1	0	0	3	0	0	0	6
Minimum	0	0	0	0	47	0	64	0	0	11	0	0	0	11
Maximum	0	0	0	0	123	0	64	0	0	160	0	0	0	160
Median	0.0	0.0	0.0	0.0	80.0	0.0	64.0	0.0	0.0	105.0	0.0	0.0	0.0	80.0
Academic	2	0	1	0	0	0	30	4	0	31	3	0	0	71
Minimum	105	0	125	0	0	0	17	22	0	14	48	0	0	14
Maximum	144	0	125	0	0	0	244	65	0	89	181	0	0	244
Median	124.5	0.0	125.0	0.0	0.0	0.0	102.0	50.0	0.0	35.0	90.0	0.0	0.0	100.5

indication of the perception of the psychologist's role in a particular community.

Analytic Cases

Adjustment Cases. The various types of adjustment cases which were referred were described under the following headings (where necessary any discrepancy between definitions used for this past year the previous year will be indicated):

Physical Aggression: The referred behavior usually was reported as aggressiveness towards another which more specifically included hitting, kicking, biting, pushing, etc.

Destruction: The child's behavior involved some form of physical abuse upon materials or other's possessions such as burning, cutting, smashing, tearing, etc.

Disruption: The behavior of the child served to disrupt the ongoing activity in the classroom or elsewhere. The behavior could not be classified under another more specific class of behaviors, such as destruction, physical aggression, verbalization, etc.

Verbalization-General: A behavior classed as general verbalization usually meant talking but not necessarily inappropriately to the situation. It may be desirable to increase or decrease the behavior. For example, increasing question-asking, use of sentences, etc.

Verbal Dysfluency: Considered under this class would be stuttering or stammering--behavior which, last year, was classified under the broader class of physical disabilities.

Inappropriate Verbalizations: Classified here would be such undesirable or unnecessary verbalizations as crying, yelling, swearing, inappropriate answers, unnecessary questions, teasing, speaking too softly, tantrums, etc.

Group Involvement (Social Participation): Classification of behaviors which would include not participating in a group task, hanging onto adults, staying in room and/or committees, participation in committees, being in a particular location, and socially interacting (includes leaving room/building and over-attending toward an adult from last year).

Task Production: This category involves individual behaviors of attending to task, completing assignment, changing way of attacking task, doing additional tasks, etc., which partially covers last year's attention category and completely includes the category of academic completion. In addition, last year's category of dependence, which included not performing a task without getting attention from an adult, etc., now would be included in this new category of task production whereby the referred child did not complete the task without depending upon the teacher's reactions.

Following Rules and Directives: The discriminative stimulus is given prior to the following types of behavior--latency in doing something (time it takes to line up); obedience (doing as told); not cleaning up after committee (includes last year's disobedience).

Interpersonal Relationships: A new category to be used when the referred behavior involves consideration of others, good sportsmanship, respect for others (people and property), getting along with others.

Personal Habits (Inappropiate Personal Habits): Referred behaviors which fell into the area of toilet training, nose picking, masturbation and/or inappropriate body movements. Also included would be behaviors which the child can do but does not (not necessarily considered as not following directions), clothes hanging, tongue hanging out, wearing glasses.

Honesty (Dishonesty): Includes lying and stealing.

Physical Skill: The referred child cannot or has not learned to do something, for example, bike riding, clothes hanging, eating correctly, skipping rope and/or cleaning up (self-help skills and social graces).

Psycho-Physiological Reaction: The referred problem centered about behaviors which were clearly physical--such as a rash, ulcer, or vomiting--reactions to environmental situations.

Physical Dysfunction (or Disability): This category includes such referral problems as poor eyesight, hearing problems, cerebral palsy, etc.

The last two categories did not have any referrals for this year's report.

In the major area of analysis cases which follow the consultation process for adjustment problems, a large portion of cases were classified as physical aggression (16%), disruption (16%), and group involvement (14%). This is a duplication of the trend of referrals for the 1970-71 report. Since the

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Table 10

Case Type

COMMUNITY	1	2	4	5	6	7	8	9	10	11	12	13	14	TOTAL
Total Cases	44	72	104	47	205	50	111	36	39	140	148	2	5	1003
Adjustment	7	26	4	23	22	21	29	17	0	46	120	1	4	320
Percent	.16	.36	.04	.49	.11	.42	.26	.47	0.00	.33	.81	.50	.80	.32
Academic - Target Conditions	1	8	14	8	2	11	2	1	0	9	16	0	0	72
Percent	.02	.11	.13	.17	.01	.22	.02	.03	0.00	.06	.11	0.00	0.00	.07
Mediational Skills	1	0	0	0	0	3	0	3	0	18	7	1	0	33
Percent	.02	0.00	0.00	0 00	0.00	.06	0.00	.08	0.00	.13	.05	0.00	0.00	.03
Behavioral Objectives														
Adjustment	0	0	0	0	3	0	1	0	0	3	0	0	0	7
Percent	0.00	0.00	0.00	0.00	.01	0.00	.01	0.00	0.00	.02	0.00	0.00	0.00	.01
Academic	2	0	1	0	0	0	36	5	0	31	4	0	0	79
Percent	.05	0.00	.01	0.00	0.00	0.00	.32	.14	0.00	.22	.03	0.00	0.00	.08
Not Identified	33	38	85	16	178	15	43	10	39	33	1	0	1	492
Percent	.75	.53	.82	.32	.87	.30	.39	.28	1.00	.24	.01	0.00	.20	.49

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Table 11 Type of Adjustment Problems Referred

COMMUNITY				4	5	6	7	8	9	10	11	12	13	14	Total
Total Cases		7	26	4	23	22	21	30	17	0	46	120	1	4	320
Physical Assault		3	2	0	1	4	2	11	4	0	8	18	0	2	55
	Percent	.42	.07	0.00	.04	.18	.09	.37	.23	0.00	.17	.15	0.00	.50	.17
Destruction		0	0	0		0	0	0	0	0	0	1	0	0	1
	Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Disruption		0	7	0	2	2	4	4	4	0	8	16	1	1	49
	Percent	0.00	.36	0.00	.03	.09	.19	.13	.23	0.00	.17	.13	1.00	.25	.15
Verbalization - General		0	2	1	2	0	0	0	2	0	1	1	0	0	27
	Percent	0.00	.07	.25	.08	0.00	0.00	0.00	.11	0.00	.02	.15	0.00	0.00	.08
Verbal Dysfluency		0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Percent	0.00	0.00	0.00	0.00	0.00	0.00	.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inappropriate Verbalizations		1	0	0	1	3	0	6	0	0	11	16	0	0	38
	Percent	.14	0.00	0.00	.04	.13	0.00	.20	0.00	0.00	.23	.13	0.00	0.00	.11
Group Involvement		2	0	1	6	5	5	2	2	0	3	20	0	0	46
	Percent	.28	0.00	.25	.26	.22	.23	.06	.11	0.00	.06	.16	0.00	0.00	.14
Task Production		0	9	0	2	1	3	2	3	0	3	5	0	1	29
	Percent	0.00	.34	0.00	.08	.04	.14	.06	.17	0.00	.06	.04	0.00	.25	.09
Following Rules or Directives		0	3	1	5	0	1	2	2	0	3 3	16	0	0	33
	Percent	0.00	.11	.25	.21	0.00	.04	.06	.11	0.00	.06	.13	0.00	0.00	.10
Interpersonal Relationships		1	0	0	0	5	0	0	0	0	5	1	0	000	.12
	Percent	.14	0.00	0.00	0.00	.22	0.00	0.00	0.00	0.00	.10	0.00	0.00	0.00	.03
Personal Habits		0	1	1	4	0	5	1	0	0	2	5	0	0	19
	Percent	0.00	.03	.25	.17	0.00	.23	.03	0.00	0.00	.04	.04	0.00	0.00	.05

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Table 11 (Cont.) Type of Adjustment Problems Referred

COMMUNITY	1	[illegible]	4	5	6	7	8	9	10	11	12	13	14	Total
Honesty	0	2	0	0	1	1	0	0	0	1	0	0	0	5
Percent	0.00	.07	0.00	0.00	.04	.04	0.00	0.00	0.00	.02	0.00	0.00	0.00	.01
Physical Skill	0	0	0	0	0	0	0	0	0	1	2	0	0	3
Percent	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	.02	.01	0.00	0.00	0.00
Behavioral Objectives Cases: Type of Adjustment Problems Referred														
Total Cases	0	0	0	0	3	0	1	0	0	3	0	0	0	7
Physical Assault	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Percent	0	0	0	0	.33	0	0	0	0	0	0	0	0	.14
Verbalization - General	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Percent	0	0	0	0	0	0	0	0	0	.33	0	0	0	.14
Group Involvement	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Percent	0	0	0	0	.33	0	0	100.00	0	0	0	0	0	.28
Task Production	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Percent	0	0	0	0	0	0	0	0	0	.66	0	0	0	.28
Interpersonal Relationships	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Percent	0	0	0	0	.33	0	0	0	0	0	0	0	0	.14

behaviors included in those categories tend to disrupt the flow of normal classroom operation, the teacher is more likely to refer such cases in hopes of a behavior change.

Percentages provided in Tables 10, 11, 12, and 13 allow for an analysis of the types of cases usually referred for each community. The varying profiles tend to reflect somewhat the different role perceptions for the psychologist in the community. This is more clearly presented as major areas in Table 10. In community No. 12 no one specific category for referral follows the other information provided by previous tables. The psychologist in that community seems to have provided services covering a broad range of areas and types of cases.

Academic Cases

Tables 12 and 13 present the major area of academic problems. These two tables list the major educational areas in which cases were referred with additional specification of the content and the target behavior response required of the child.

Major area categories include:

Reading: The previous year's categories of word recognition, letter recognition, and sounds are now included in this major area and a child might be referred as having difficulties in any one.

Writing: The child was referred because of difficulties with the physical response (with or without a model) of writing (cursive or printing).

Arithmetic: The referral was made in an effort to help the child with arithmetic concepts and computation.

Concept Learning: Referrals were made when there were difficulties in learning various concepts, such as color, words, left/right orientation, etc.

Other: This category is presently unspecified but includes such learning behaviors as sequencing, alphabetizing, spelling and grammar.

The content areas further specify the academic difficulties and more than one type of content can be specified for one case (the titles are self-explanatory): Letters, Words, Numbers, Objects, Concepts, Colors.

Target response categories specify the performance required of the child to exemplify whether or not he is learning the specified goal behavior. More than one type of behavior may be required in the task.

Labeling: The child is required verbally to give a name for an object or concept. This category would include such behaviors as identifying.

Reproduction: The target behavior would be the verbal or manipulative production of a sound, object, label, word, letter, etc., which had been presented or modeled previously.

Serial Reproduction: The target response involves the child producing an idea, story, letter or number sequence, etc., which had been presented previously, in order.

Performing combinations: The child combined two or more elements to obtain a product. The target responses generally occurred within the arithmetic area; however, it also might be listed in the area of reading.

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Table 12 Type of Academic Problems Referred - Target Conditions

Community		1	2	4	5	6	7	[illegible]	9	10	11	12	13	14	Totals
Total Cases		[illegible]	[illegible]	[illegible]	[illegible]	2	11	2	1	0	9	16	0	0	72
Major Area	Reading	[illegible]	[illegible]	5	7	2	10	1	1	0	3	6	0	0	36
	Percent	0	50	35	37	100	90	50	100	0	33	37	0	0	54
	Writing	1	3	4	0	0	0	0	0	0	3	5	0	0	16
	Percent	100	37	28	0	0	0	0	0	0	33	31	0	0	22
	Arithmetic	0	1	3	1	0	0	0	0	0	2	2	0	0	[illegible]
	Percent	0	12	21	12	0	0	0	0	0	22	12	0	0	12
	Concept Learning	0	0	2	0	[illegible]	1	1	0	0	1	2	0	0	[illegible]
	Percent	0	0	14	0	0	[illegible]	50	0	0	11	12	0	0	[illegible]
Content	Letters	1	6	8	2	1	7	1	0	0	2	9	0	0	37
	Percent	100	75	57	25	50	63	50	0	0	22	56	0	0	51
	Words	0	1	1	5	1	3	0	1	0	3	4	0	0	19
	Percent	0	12	7	62	50	27	0	100	0	33	25	0	0	26
	Numbers	0	2	3	1	0	0	0	0	0	3	5	0	0	[illegible]
	Percent	0	25	21	12	0	0	0	0	0	33	31	0	0	[illegible]
	Objects	0	0	0	0	0	1	0	0	0	0	1	0	0	2
	Percent	0	0	0	0	0	9	0	0	0	0	6	0	0	2
	Concepts	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	Percent	0	0	7	0	0	0	0	0	0	0	0	0	0	1
	Colors	0	0	1	0	0	0	1	0	0	1	1	0	0	[illegible]
	Percent	0	0	7	0	0	0	50	0	0	11	6	0	0	5
Target Response	Labeling	0	3	6	7	2	10	2	1	0	5	8	0	0	44
	Percent	0	37	42	87	100	90	100	100	0	55	50	0	0	61
	Reproducing	1	4	5	0	0	0	0	0	0	3	6	0	0	19
	Percent	100	50	35	0	0	0	0	0	0	33	37	0	0	26
	Serial Reproducing	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	Percent	0	0	0	0	0	0	0	0	0	0	6	0	0	1
	Performing Combinations	0	1	2	1	0	0	0	0	0	0	0	0	0	[illegible]
	Percent	0	12	14	12	0	0	0	0	0	0	0	0	0	5
	Comprehension	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	Percent	0	0	7	0	0	0	0	0	0	0	0	0	0	1
	Discrimination & Matching	0	0	0	0	0	1	0	0	0	0	1	0	0	2
	Percent	0	0	0	0	0	9	0	0	0	0	6	0	0	2

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Tabel 12 (continued) Behavioral Objectives Cases

Community		1	2	3	[illegible]	5	7	8	9	10	11	12	13	14	Totals
Total Cases						0	0	36	5	0	31	[illegible]	0	0	[illegible]
Major Area	Reading				0	0	0	29	[illegible]	0	15	3	0	0	[illegible]
	Percent	100		100	0	0	0	80	80	0	48	75	0	0	63
	Writing	0	0	0	0	0	0	0	0	0	3	0	0	0	3
	Percent	0	0	0	0	0	0	0	0	0	9	0	0	0	3
	Arithmetic	0	0	0	0	0	0	5	1	0	3	0	0	0	9
	Percent	0	0	0	0	0	0	17	20	0	9	0	0	0	11
	Concept Learning	0		0	0	0	0	0	0	0	4	1	0	0	5
	Percent	0	0	0	0	0	0	0	0	0	12	25	0	0	6
	Other	0	0	0	0	0	0	2	0	0	6	0	0	0	8
	Percent	0	0	0	0	0	0	5	0	0	19	0	0	0	[illegible]
Content	Letters	1	0	1	0	0	0	17	2	0	[illegible]	2	0	0	31
	Percent	50	0	100	0	0	0	47	40	0	25	50	0	0	[illegible]
	Words	1	0	0	0	[illegible]	0	22	1	0	19	[illegible]	0	0	[illegible]
	Percent	50	0	0	0	0	0	61	20	0	61	5	0	0	56
	Numbers	0	0	0	0	0	0	[illegible]	1	0	3	0	0	0	8
	Percent	0	0	0	0	0	0	11	20	0	9	0	0	0	10
	Shapes	[illegible]	0	0	0	0	0	0	0	0	2	0	0	0	[illegible]
	Percent	[illegible]	0	0	0	0	0	0	0	0	6	0	0	0	6
	Objects	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	Percent	[illegible]	0	0	0	0	0	0	0	0	3	0	0	0	1
	Colors	0	0	0	0	0	0	0	0	0	2	2	0	0	[illegible]
		0	0	0	0	0	0	0	0	0	6	50	0	0	[illegible]
Target Response	Labeling	2	0	1	0	0	0	28	3	0	20	[illegible]	0	0	53
	Percent	100	0	100	0	0	0	77	60	0	64	100	0	0	[illegible]
	Reproducing	2	0	0	0	0	0	[illegible]	0	0	6	1	0	0	18
	Percent	100	0	0	0	0	0	25	0	0	[illegible]	25	0	0	22
	Serial Reproducing	0	0	0	0	0	0	2	0	0	[illegible]	0	0	0	6
	Percent	0	0	0	0	0	0	5	0	0	12	0	0	0	7
	Performing Combinations	0	0	0	0	0	0	[illegible]	1	0	0	0	0	0	5
	Percent	0	0	0	0	0	0	11	20	0	0	0	0	0	6
	Discrimination & Matching	1	0	0	0	0	0	0	0	0	3	1	0	0	5
	Percent	50	0	0	0	0	0	0	0	0	[illegible]	25	0	0	6
	Generalization	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	Percent	0	0	0	0	0	0	0	20	0	0	0	0	0	1

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Table 13

Type of Academic Problems Referred - Mediational Skills

Community				4	5	6	7	8	9	10	11	12	13	14	Total
Total Cases		[illegible]	0	0	0	0	3	0	3	0	18	7	1	0	32
Major Area															
Reading		0	0	0	0	0	0	0	0	0	16	2	1	0	18
	Percent	0	0	0	0	0	0	0	0	0	88	28	1.00	0	56
Writing		1	0	0	0	0	1	0	2	0	1	4	0	0	9
	Percent	100	0	0	0	0	33	0	66	0	5	57	0	0	28
Arithmetic		0	0	0	0	0	2	0	1	0	1	0	0	0	4
	Percent	0	0	0	0	0	66	0	33	0	5	0	0	0	12
Other		0	0	0	0	0	0	0	0	0	0	1	0	0	1
	Percent	0	0	0	0	0	0	0	0	0	0	14	0	0	3
Content															
Letters		1	0	0	0	0	1	0	0	0	16	6	1	0	24
	Percent	100	0	0	0	0	33	0	0	0	88	85	1.00	0	75
Words		0	0	0	0	0	2	0	2	0	0	0	0	0	4
	Percent	0	0	0	0	0	66	0	66	0	0	0	0	0	12
Numbers		0	0	0	0	0	0	0	1	0	2	0	0	0	3
	Percent	0	0	0	0	0	0	0	33	0	11	0	0	0	9
Shapes		0	0	0	0	0	0	0	0	0	0	1	0	0	1
	Percent	0	0	0	0	0	0	0	0	0	0	14	0	0	3
Target Response															
Labeling		0	0	0	0	0	0	0	0	0	12	2	1	0	14
	Percent	0	0	0	0	0	0	0	0	0	66	28	1.00	0	43

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Table 13 (cont.)

Community	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12	13	14	Total
Reproducing	1		5	0	0	2	0	2	0	1	5	0	0	11
Percent	100	0	0	0	0	66	0	65	0	5	71	0	0	34
Serial Reproducing	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Percent	0	0	0	0	0	0	0	53	0	0	0	0	0	3
Performing Combinations	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Percent	0	0	0	0	0	33	0	0	0	0	0	0	0	3

Comprehension: The target response would be a verbal or written response to a question or directive which would be indicative of whether or not the child has synthesized the material having been presented.

Discrimination and Matching: The target response is the behavior of selecting between two alternative stimuli the correct response. When matching, the child was required to find another example of the first.

The major area of concern for all communities when referring Academic cases (Tables 12 and 13) was Reading, more specifically the labeling of letters. Since the Follow Through classrooms are predominately on the kindergarten, first grade and second grade levels, the identified need for learning to label the letters of the alphabet as a prerequisite skill in the area of reading is understandable. As would be expected, the largest portion of behavioral objectives cases referred fell into the academic area wherein target conditions were the vehicle for implementation. No behavioral objective cases followed the mediational skill training procedures.

Modification Plans. In order to interpret the data presented by Tables 14 and 15, it is important to understand that when planning to bring about change in behavior--be it learning or adjustment--the environmental events surrounding the behavior necessitate manipulation in order to bring about change. These events are referred to as antecedent and consequent events. When undertaking behavior change related to academic referrals, there is, in addition, the need for information concerning the type of response required of the child during instruction.

An interaction analysis, which would indicate the type of response required, and the effectiveness of the mainipulation of specific environmental events by analyzing the event and response variables could provide valuable information. However, a similar type of information is made available via the modification plan retrieval system now in operation within the Information System, although the effectiveness of the modification of events having been used is not analyzed. This is perhaps a more practical approach in that it provided useful suggestions of plans having been used previously without having to deal with other variables which might have an effect on goal attainment. For example, a plan which might be highly effective for one child might not provide any impetus for change for another child due to the intrinsic variables not being analyzed also. The latter retrieval plan, therefore, does not lose useful suggestions for modification planning dealing with the effectiveness issue.

The following classification descriptions were used for antecedent events (Tables 14, 15, and 16):

Modeling: The complete response required of the child is provided (verbal of physical). For example, "This is an A".

Prompting: Giving a hint or a partial response or drawing attention to a part of the stimulus. "This is 'a-a____' " (apple) or showing a picture of an apple. Writing the word "apple" to get the required verbal response of "apple".

Establishing, Altering, or Removing SD (discriminative stimulus): In order to obtain the desired response, the change agent may give a stimulus which instigates behavior without providing any part of the actual response (such as case with prompting)--"Tell me the name of this letter", "Throw the ball"; the change agent may give a signal for a response--pointing to a child as a signal for him to quiet down; by reordering the environment so that the target response cannot be made, such as changing a child's seat so he can't talk to a best friend or having the teacher sit next to a child to discourage his hitting; doing something to instigate child's behavior--give the child duties to do. In order for this classification to be used as describing antecedent events, the cue must occur immediately prior to the desired response. Instructions given to a child sometime before the desired response would not be included.

Physical Response Guidance: Putting in the desired response. For example, actually taking the child's hand and forming the letter for him.

Incontingent Application of Hypothesized Reinforcer: Instances where the positive "reinforcer" is given before the response occurs--hugging and attending to Susie when she comes to school in hopes of preventing her leaving the classroom. The change agent may praise everything the child does well.

Task Alteration: By changing the stimulus, the number of responses to be made, reordering the presentation of stimuli, breaking a large task into several smaller ones, are examples of the alteration of a task.

The following classification descriptions were used for consequent events (Tables 14, 15, and 16):

Add Positive Reinforcer: The response is rewarded with tangible or intangible reinforcers.

Remove Positive Reinforcer: A reinforcer, which is known to be positive, is taken away. Examples of this would be: whenever Susie grabs from another student, she will not be permitted to play with the doll during free choice; when Joe hits, he will not be allowed to go to recess. Removal of the activity the child was doing is considered "Time out".

Add an Aversive Stimulus: The consequent event would include the punishment of a response. Make the child do something that is *always* aversive because an organism tends to avoid or escape from it. Other aversive stimuli might include spankings, being last in line, etc. Staying in the room is not always considered aversive; therefore, it is classified as the removal of a positive reinforcer.

Remove Aversive Stimuli: Something negative, which was there *before* the modification plan was instigated, is taken away. An example of this would be to stop other children from teasing Susie when she talks in order to increase her talking.

In the above classifications of consequent events, not only may more than one procedure be used, but also more than one stimulus within a category can be used.

Extinction: Ignore the response, take away (or omit) positive reinforcement directly related to the response--stop putting one's arm around the child while correcting him. The plan would be to remove a reinforcer that is maintaining the behavior and thus remove the reinforcing value of the change agent's behavior.

DRO (differential reinforcement of other behavior): An example of this would be to reinforce the absence of a response or to reinforce after a period of time in which the response did not occur. Also included in this category would be the reinforcement of a competing response.

Counseling: This would be discussing with the child the target behavior not codable in any other category.

It should be noted that more than one modification procedure can be used for the antecedent and consequent event and that the plan can include modification of both events or of only one event.

Table 14 shows the overall data for those cases referred as Adjustment cases. The technique most often used in modification plans was to manipulate the consequent events by adding a positive reinforcer (133 instances), alone as the total plan or as part of a more comprehensive plan using additional techniques. This is a socially acceptable way of increasing a desired behavior or decreasing an undesirable behavior. Table 15 illustrates that adding a positive reinforcer was most often used when increasing a desirable behavior. When utilized in modification of environmental events, positive reinforcement usually is directed on a planned reinforcement schedule. This makes it a powerful technique; however, it does depend on the occurrence of the desired response, which would explain the high frequency of the procedures of Establishing, Altering, or Removing of Discriminative Stimulus, providing the cue antecedent to response occurrence (103 instances).

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Table 14

Type of Mod [illegible] mented - Adjustment*

Community	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13	14	Total
Antecedent Events														
Modeling	0	[illegible]	[illegible]	3	0	[illegible]	0	0	0	1	7	0	0	14
Prompting	0	[illegible]	1	0	[illegible]	[illegible]	2	0	0	0	0	0	0	4
Establishing, Altering, or Removing S/D	2	7	[illegible]	[illegible]	[illegible]	6	1	2	0	12	44	1	0	103
Incontingent Appl. Hypothesized Reinf.	1	2	0	1	1	0	0	2	0	7	14	0	0	28
Task Alteration	0	2	0	1	1	3	0	0	0	0	10	0	0	17
Consequent Events														
Add Positive Reinforcer	2	17	4	13	13	9	12	4	0	18	40	0	1	133
Remove Positive Reinforcer	1	6	0	4	1	8	10	2	0	5	15	1	2	55
Add an Aversive Stimuli	0	2	0	1	0	0	1	0	0	0	0	0	1	5
Extinction	0	1	1	1	1	9	7	2	0	14	40	0	0	76
D/R/O	0	5	0	5	4	5	8	3	0	20	34	0	1	85
Counseling	0	0	0	3	4	4	1	1	0	10	5	0	0	28
Remove Aversive Stimuli	0	0	0	0	1	0	0	0	0	0	0	0	0	1

* including B.O. cases

Tables 15 and 16 show that the procedure of providing the discriminative stimulus for the behaviors to occur was utilized when decreasing and increasing the target behavior.

The differential reinforcement of other behavior (DRO), which also includes the reinforcement of a competing response, would be an alternate procedure to the one described above. It eliminates the need for waiting until the target or desired behavior occurs or for providing for its occurrence by positively reinforcing another behavior. DRO might be used along with cueing; thus, the competing response would be provided. DRO was useful when attempting to decrease the target behavior (80 instances), but it was not as popular for increasing a behavior.

Extinction (ignoring) is an effective technique for decreasing an undesirable behavior. It also is considered worthwhile when the desire is to increase behavior. In both instances the procedure includes the positive reinforcement of a response in competition with the target behavior.

There is a change in the use of consequent evant alteration from previous years as the addition of an aversive stimulus is no longer considered an effective procedure. An alternative procedure is used in its place--removing a positive reinforcement whenever the undesired behavior occurs. For example, the child could not go to recess if he hits another student. This technique was utilized for decreasing and increasing the taget behavior at a much higher rate than the technique of adding an aversive stimulus.

Table 20 presents the type of positive reinforcement most often used. It is not surprising to discover that verbal praise was most frequently utilized. The other type used on a frequent basis was the application of

Table 15

Type Of Modificatio [illegible] - Adjustment - Increase Behavior*

Community	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12	13	14	[illegible]
Antecedent Events														
Modeling	0		[illegible]	2	[illegible]	[illegible]	1	0	0	1	4	0	0	10
Prompting	0		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	0	0	0	2
Establishing, Altering, or Removing S/D	0	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	5	7	5	0	0	50
Incontingent Appl. Hypothesixed Reinf.	0	0	0	0	0	0	0	1	0	[illegible]	5	0	0	7
Task Alteration	0	1	0	0	0	2	0	0	0	0	7	0	0	10
Consequent Events														
Add Positive Reinforcer	0	11	3	10	5	7	7	3	0	16	24	0	1	97
Remove Positive Reinforcer	1	1	0	3	0	1	2	2	0	2	4	0	0	16
Add an Aversive Stimuli	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Extinction	0	0	0	1	1	5	3	1	0	4	16	0	0	33
D/R/O	0	1	0	0	1	0	1	0	0	0	2	0	0	5
Counseling	0	0	0	1	1	2	0	0	0	4	2	0	0	10

*Includes B.O. Cases

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Table 16

Type of Modification Procedures Implemented - Adjustment - Decrease Behavior*

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Antecedent Events														
Modeling	0	1	0	1	0	0	0	0	0	0	3	0	0	5
Prompting	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Establishing, Altering, or Removing S/D	2	4	0	5	8	4	3	1	0	5	19	1	0	52
Incontingent Appl. Hypothesized Reinf.	1	2	0	1	2	0	0	1	0	6	9	0	0	22
Task Alteration	0	1	0	0	2	1	0	0	0	0	3	0	0	7
Consequent Events														
Add Positive Reinforcer	2	6	1	3	8	2	5	1	0	2	6	0	0	36
Remove Positive Reinforcer	0	5	0	1	1	7	8	0	0	3	11	1	2	39
Add An Aversive Stimuli	0	2	0	1	0	0	0	0	0	0	0	0	1	4
Remove Aversive Stimuli	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Extinction	0	1	1	0	0	4	4	1	0	10	22	0	0	43
D/R/O	0	4	0	5	3	5	7	3	0	20	32	0	1	80
Counseling	0	0	0	2	3	2	1	1	0	6	3	0	0	18

*Includes B.O. Cases

reinforcement via activities such as using the typewriter, being made chairman of a committee, being first in line, sitting next to the teacher on the rug, etc.

Two types of procedures can be followed when planning for the modification of academic problems. The decision as to which procedure to follow is made by the psychologist during the problem identification interview and is based upon certain clues gleaned from the statements made by the change agent. For instance, the change agent may give support to the possibility that (because of the inconsistent level of academic performance) the child may be able to perform the learning behavior but chooses not to do so. As a result of this type of information, the psychologist would use the relevant interviewing techniques that would lead to target conditions manipulation planning after obtaining baseline data.

Table 17 provides the descriptive information concerning the implementation of such target conditions manipulation planning as in the example mentioned above. The behavior objective cases data is presented separately to provide more specific information of the techniques being implemented in classrooms.

Tables 17 and 18, which present the modification procedures implemented for the academic cases, include the specific modification of the antecedent and consequent events previously described in this report. In addition, information about the child's response behavior taking place during teaching is provided.

When target conditions (either antecedent or consequent events) have been manipulated, the response behavior will be essentially the same as the response indicated on Tables 12 and 13. The manipulation of events is directed towards increasing the desired target behavior and some alteration is planned in the ongoing teaching procedure.

When mediational skill training is directed towards increasing the target response learning behavior, the response type required of the child during skill training may or may not be the same.

In addition to the response categories described previously, the following categories also would describe the response required of the child as a result of either altering teaching procedures or introducing skill training.

> Generalization: The child's response is the application of a concept to other examples, learning "dog" from a picture of a collie, then can also identify a picture of a great dane as "dog".
>
> Physical manipulation: The response the child makes would be his physical manipulation of something tangible--typing his shoes, holding a pencil, etc.
>
> Production: The target response could be writing a story, word (not reproducing from a model); verbalizing (but not described in any category previously mentioned); drawing; construction; etc.

In previous years, it has not been specified whether the procedure used to bring about behavior change for academic cases was mediational skill training or target conditions manipulation. This year's data--with over twice as many cases following the target conditions manipulation procedure--seems to indicate that changes in teaching procedures and/or other environmental conditions was the most popular procedure. It indicates a decision-making activity on the part of the psychologist which occurs early in the

Table 17

Types of Modification Procedures Implemented - Academic T/C

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Antecedent Events														
Modeling	1	1	12	5	1	7	1	0	0	3	2	0	0	33
Prompting	0	0	1	4	0	0	0	0	0	0	1	0	0	6
Establishing, Altering, Or Removing S/D	1	4	3	4	2	4	2	0	0	3	3	0	0	26
Physical Response Guidance	0	0	1	0	1	1	0	0	0	0	0	0	0	3
Task Alteration	0	0	2	2	0	0	1	0	0	0	0	0	0	5
Consequent Events														
Add Positive Reinforcer	1	5	13	8	2	6	0	0	0	5	6	0	0	46
Remove Positive Reinforcer	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Remove Aversive Stimuli	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Response Types														
Labeling	0	2	6	6	2	10	2	0	0	3	2	0	0	33
Reproducing	1	2	5	2	0	5	1	0	0	2	2	0	0	20
Performing Combinations	0	0	2	1	0	0	0	0	0	0	0	0	0	3
Comprehension	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Discrimination and Matching	1	0	0	0	0	2	0	0	0	0	2	0	0	5
Antecedent Events														
Modeling	0	0	1	0	0	0	2	0	0	12	1	0	0	16
Prompting	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Establishing, Altering, or Removing S/D	0	0	0	0	0	0	10	0	0	19	0	0	0	29

Table 17 (cont.)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Consequent Events														
Add Positive Reinforcer	0	0	1	0	0	0	6	0	0	0	1	0	0	8
Response Types														
Labeling	2	0	1	0	0	0	7	1	0	21	3	0	0	35
Reproducing	1	0	0	0	0	0	13	0	0	7	2	0	0	23
Serial Reproducing	0	0	0	0	0	0	3	2	0	4	0	0	0	9
Discrimination and Matching	1	0	0	0	0	0	12	0	0	9	1	0	0	23

consultation process. The psychologist, by using the appropriate interviewing techniques, explores first the possibility of target conditions manipulation procedures being effective by picking up the appropriate cues. This makes the system more efficient because the implementation of mediational skills analysis for training does take considerable time. Table 5 indicates that with an 88% success level it is a worthwhile undertaking where indicated.

Although we no longer obtain and report specifically whether the goal was to increase or decrease the target behavior for academic referrals, we easily can assume that increasing the target behavior usually would be the goal of an academic referral. This is not always the case for adjustment referrals. The trend, when target conditions were altered during instruction, was to provide more reinforcement during the consequent event while providing more accurate stimuli information by modeling the desired response as an alteration of the antecedent event.

Another frequently used procedure occurring prior to the target response is the establishment, alteration and/or removal of a discriminative stimulus. Since this category encompasses any verbal stimulation -and labeling is a high frequency content for referrals--this could be an expected outcome of the data.

The response most often required during mediational skill training (Table 18) was either labeling, reproducing with modeling, or establishing the discriminative stimulus. It is unexpected to find positive reinforcement not being used more frequently; however, it is possible that it simply was not reported by the psychologist.

Table 18 Types of Modification Procedures Implemented - Academic M/S

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Antecedent Events														
Modeling	1	0	0	0	0	2	0	3	0	3	7	0	0	16
Establishing, Altering, or Removing S/D	1	0	0	0	0	2	0	3	0	3	5	0	0	14
Physical Response Guidance	0	0	0	0	0	2	0	0	0	0	1	0	0	3
Consequent Events														
Add Positive Reinforcer	1	0	0	0	0	1	0	0	0	2	7	0	0	11
D/R/O	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Response Types														
Labeling	1	0	0	0	0	0	0	3	0	8	3	0	0	15
Reproducing	1	0	0	0	0	3	0	3	0	1	6	0	0	14
Serial Reproducing	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Performing Combinations	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Comprehension	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Discrimination and Matching	0	0	0	0	0	1	0	0	0	0	3	0	0	4
Generalization	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Physical Manipulation	0	0	0	0	0	2	0	0	0	0	0	0	0	2

Table 19 reports the procedure employed for obtaining goal behavior of all cases referred which reached the point of modification planning. Although this is a comprehensive picture of the implementation of the consultation process, its value lies in the overall picture it presents of the range of procedures and techniques used by the psychologist to assist the change agent in planning.

Reinforcers. Of the approximately 400 cases reporting modification plans, 255 instances of introducing or withdrawing a positive reinforcer . occurred. Only 65 instances of adding an aversive stimulus were reported as a means of affecting behavioral change by altering consequent events. See Table 19.

The low instances of aversive stimuli (65) would indicate that efforts made last year through in-service---and working more frequently with program assistants---had been effective in reducing planning procedures utilizing aversive stimuli.

Some examples of type of reinforcement and stimuli are provided below. The psychologist might indicate that more than one reinforcer was applicable.

Consumable - candy or cookies-food

Objects - stars; points; book; toy

Activity - classroom provileges; running errands; being read to; dressing up; typing

Position - first in line, next to teacher

Physical - hug

Verbal - praise

Tokens - stars, points or chips redeemed for something else

Table 19 Types of Modification Procedures Implemented - All Case Types (Cont.)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Antecedent Events														
Modeling	2	2	14	8	1	10	4	3	0	19	17	0	0	80
Prompting	0	0	2	4	1	0	3	0	0	0	1	0	0	11
Establishing, Altering, or Removing S/D	4	11	4	15	15	12	16	5	0	37	52	1	0	172
Physical Response Guidance	0	0	1	0	1	3	0	0	0	0	1	0	0	6
Incontingent Appl. Hypothesized Reinf.	1	2	0	1	1	0	0	2	0	7	14	0	0	28
Task Alteration	0	2	2	2	2	3	1	0	0	0	10	0	0	22
Consequent Events														
Add Positive Reinforcer	4	22	18	21	15	16	13	4	0	25	54	0	1	193
Remove Positive Reinforcer	1	8	0	4	1	8	10	2	0	5	15	1	2	57
Add An Aversive Stimuli	0	2	0	1	0	0	1	0	0	0	0	0	1	5
Remove Aversive Stimuli	0	0	0	1	1	0	0	0	0	0	0	0	0	2
Extinction	0	1	1	1	1	9	7	2	0	14	40	0	0	76
D/R/O	0	5	0	5	4	6	8	3	0	20	34	0	1	86
Counseling	0	0	0	3	4	4	1	1	0	10	5	0	0	28
Response Types														
Labeling	3	2	7	6	2	10	9	4	0	32	8	0	0	33
Reproducing	3	2	5	2	0	8	14	3	0	10	10	0	0	57
Serial Reproducing	0	0	0	0	0	1	3	2	0	4	0	0	0	10
Performing Combinations	0	0	2	1	0	1	0	0	0	0	0	0	0	4
Comprehension	0	0	1	0	0	0	0	0	1	0	0	0	0	2
Discrimination and Matching	2	0	0	0	0	3	12	0	0	9	6	0	0	32

Table 19 (Continued)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Generlization	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Physical Manipulation	0	0	0	0	0	2	0	0	0	0	0	0	0	2

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Table 20 Types of Postive Reinforcers and Aversive Stimuli Used
(Behavioral Objectives Cases Not INcluded)

Community		1	2	4	5	6	7	8	9	10	11	12	13	14	TOTALS
Positive Reinforcers	Consumable	0	5	1	2	0	4	3	0	0	2	1	0	0	20
	Objects	0	0	0	4	2	1	4	0	0	2	3	0	0	16
	Activities	1	3	0	13	4	1	11	3	0	16	41	1	0	94
	Position	2	2	0	3	0	8	6	1	0	-	10	0	2	38
	Physical	0	0	0	0	0	1	1	0	0	3	5	0	0	10
	Verbal	4	23	18	24	11	12	12	3	0	32	66	0	2	207
	Tokens	2	12	0	2	2	4	10	0	0	7	15	0	0	52
Aversive Stimule	Consumable	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Objects	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	Activities	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	Position	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	Tokens	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Reinforcers for Which Tokesn Exchanges	Consumable	0	2	1	0	0	1	1	0	0	0	0	0	0	5
	Objects	0	6	0	0	0	2	1	0	0	2	2	0	0	15
	Activities	0	0	0	0	1	0	3	0	0	2	6	0	0	12
	Position	0	0	0	0	1	0	0	0	0	0	0	0	0	1

Data Collection. An area of great importance in implementation, as well as training in TEEPS, is the collection of behavior records. Baseline data are essential to understanding the nature of the problem. It allows a behavioral definition to be formulated and enables the completion of a functional analysis or task analysis to determine the contingencies or environmental conditions controlling the behavior. Data is required also as a bench mark against evaluating any modification plan which has been implemented.

Table 21 presents statistics describing the length of time data usually was taken. The median days were included in order to ascertain whether high maximum number of days was the usual or a reflection of one extreme case. See Community No. 12 for such an example. However, one day of baseline data usually was considered adequate by the psychologists.

In the procedures for skill training for academic cases, baseline data is collected; however, it is data of a different nature. For these cases there is a continual recording of target learning behavior in response to the basic teaching procedure--before and during the time skill training is occurring--and is the basis for evaluating whether or not skill training is transferring or is having the desired effect on the academic goal.

Table 22 presents information as to the number of days during which modificiation data was collected. It should be understood that although the modification plan for the manipulation of environmental contingencies may be ongoing, there may not be a continual taking of behavior data. It is more efficient to take periodic data to spot check for progress. Therefore, we no longer can make the assumption that the number of days of modification

Table 21 Baseline Data Collected (Behavioral Objectives Cases Not Included)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Number of Cases Reporting Data	5	25	14	22	10	29	18	16	0	34	86	1	3	263
Median Number Days Data Per Case	3.00	3.00	1.00	1.00	4.00	3.00	4.00	4.00	0.00	2.00	4.00	3.00	7.00	3.00
Minimum Number Days Data Per Case	1	1	1	1	1	1	1	1	0	1	1	3	5	1
Maximum Number Days Data Per Case	5	4	2	9	9	8	6	10	0	10	16	3	8	16

Table 22 Modification Data Collected (Behavioral Objectives Cases Not Included)

Community	1	2	4	5	6	7	8	9	10	11	12	13	14	Total
Number of Cases Reporting Data	5	27	18	19	10	30	15	11	0	57	67	1	3	263
Median Number Days Data Per Case	15.00	3.00	6.00	5.00	11.50	8.00	10.00	7.00	0.00	6.00	5.00	5.00	7.00	6.50
Minimum Number Days Data Per Case	9	1	2	1	5	1	3	1	0	1	1	5	5	1
Maximum Number Days Data Per Case	37	6	16	16	28	31	28	15	0	19	34	5	9	37

data also is indicative of the number of the days the modification plan was in effect.

As a result of alterations in the reporting forms and the coding key, certain kinds of information are no longer obtained, specifically the information found and discussed on pages 91 through 95 of the Final Report for 1970-1971.

ILLUSTRATIVE CASES

INTELLECTUAL SKILL TRAINING EXAMPLES

The following case is categorized as an intellectual skills case. As indicated earlier in this report, an intellectual skill, formally defined, is a behavioral capability which, when activated, functions to facilitate the performance of a culturally relevant task. The criteria used for distinguishing intellectual skills from other behavioral phenomena are as follows: the definition of the skill behavior must be stated in performance terms; transfer effects must be demonstrated; and tasks used to demonstrate transfer effects for the behavior should be of established cultural relevance (Bergan, 1971).

Mark, age 9, was referred to the psychologist because he was not learning words from the whole word approach. This method requires that the child learn whole words directly as opposed to approaching them by word analysis skills. In Mark's classroom each child told a story and the teacher wrote it down. After this the child copied the story and then read it back to the teacher. The teacher reported that in grade four, Mark could recognize less than five words although he tried very hard to do his work. Since reading is dependent on knowing individual words, this skill behavior is obviously culturally relevant.

The teacher chose as goal behavior for Mark labeling a minimum of thirty words presented. At this time a component skills analysis was performed to identify potential underlying intellectual skills which might facilitate successful performance of the goal behavior. A tentative list of related skills was established including left--right/top--bottom distinctions, recognition of first letter/last letter, letter recognition in isolation, beginning sounds, recognizing that a word is the same in two places, word recognition with dissimilar words, word recognition with similar words, copying words, and using letters as cues. The psychologist informally tested Mark to determine which skills he possessed. The component skills Mark did not adequately possess were left--right/top--bottom distinctions, first letter/last letter, letter recognition in isolation, beginning sounds and letters used as cues. After onsultation with the change agent, Mark's teacher, the four skills (subgoals) which were believed to underlie the successful performance of the goal behavior were arranged hierarchically. Methods for teaching and assessing the acquisition of the skills were outlined.

Data collection for baseline was accomplished by recording the cumulative frequently of the number of words Mark verbally labeled when the words were visually presented in isolation during free choice period (interval recording). The change agent recorded baseline for three days.

Upon examination of the baseline data it was found that Mark knew one word from a list of sample words taken from his dictation. The modification plan was then implemented, commencing with the first tentatively identified prerequisite skill behavior. This was defined as: given verbal presentation of the directions left, right, top, bottom, the child will be able to point in the directions indicated on a blank piece of paper with 100% accuracy. The other subgoals were defined as follows: given a visual presentation of words of various lengths, the child will be able to point to the first and last letter of each word at a strength of 100% accuracy;

given a visual presentation of lower case letters in isolation, the child will be able to name all 26 letters; and given a visual presentation of some words correctly identified, he will be able to say how he used letters in at least one of the words to help him identify it.

In each of the skill training sessions verbal modeling of the correct response was employed and correct responses were positively reinforced with praise. If Mark answered incorrectly the change agent repeated the verbal modeling.

During skill training the change agent continued to test Mark employing the same procedure specified in the collection of baseline data. At the completion of the skill training procedures Mark surpassed the original goal of recognizing 30 words when presented in isolation. Performance of the goal behavior increased with the acquisition of skill behaviors.

Figure 8 represents the baseline, modification and post-modification data for this case,(see following page for Figure 8).

Jack's difficulty with reading represents another intellectual skills case. His teacher indicated on the referral form to the psychologist that Jack could identify all the letters of the alphabet but had difficulty reading in the pre-primer and primer of the "Buttons" series by McCall.

The present teaching procedure involved learning words through the whole word approach. This included having each child read from the McCall readers and use the Science Research Associates (SRA) reading materials at his own level. The SRA series provides programmed reading materials

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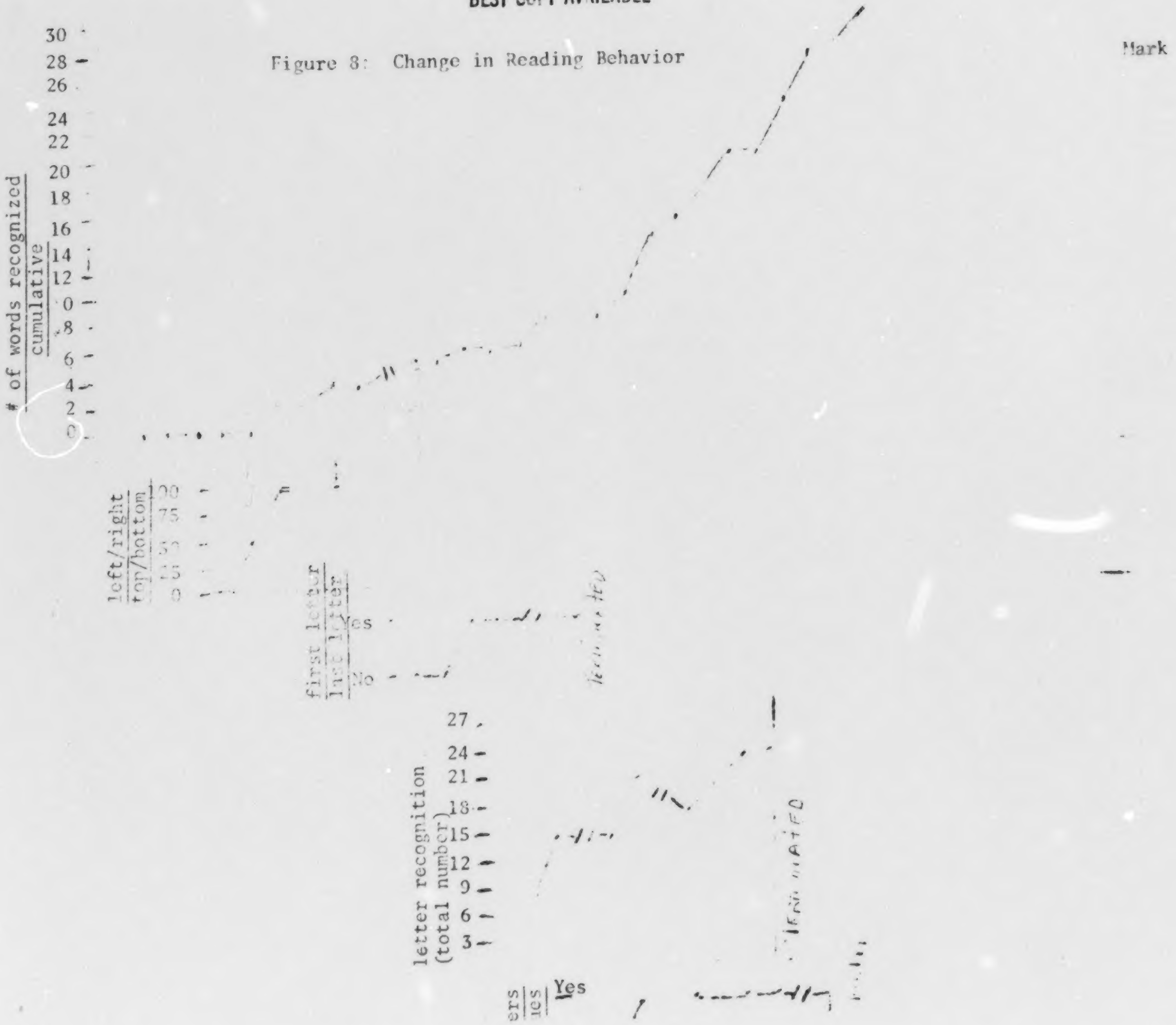
Figure 8: Change in Reading Behavior



for individual instruction in reading. In addition, the class as a whole dictated news to the teacher and one child at a time read the news to the class.

The teacher chose verbally labeling minimum of 40 words presented on flashcards as the goal behavior for Jack. A component skills analysis was performed to specify underlying intellectual skills which might facilitate successful performance of the goal behavior. A tentative list of related skills was outlined. The prerequisite skill behaviors were defined as follows: Given a flashcard with a letter of the alphabet the child will be able to verbalize the letter sound at a level of 100% accurac given two and three letter words the child will be able to identify the first and last letters, verbalize the letter sounds and then identify the word at a level of 100% accuracy; given a four letter word the child will be able to identify the sounds in the word and then put the sound together to identify the word at a level of 100% accuracy.

Baseline data were collected by recording the cumulative frequency of the number of words Jack verbalized when the words were visually presented in isolation during the time Jack and the psychologist were working together (interval recording). The words were selected from the basic word list in the pre-primer and primer of the "Buttons" series by McCall. The change agent in this case was the psychologist. Baseline data was recorded for three days.

When the teacher and psychologist inspected the baseline graph they found Jack knew a total of two words from the sample list. Jack was then told about the plan and modification was implemented.

During skill training sessions (3-4 times per week) verbal praise and cueing, giving Jack a stimulus to instigate behavior without providing any part of the actual response, were utilized.

Throughout skill training the change agent continued to test Jack using the same procedure as in the collection of baseline data. Modification was implemented for 16 days. At the conclusion of the skill training procedures Jack exceeded the original goal behavior of verbalizing 40 words when presented in isolation on flashcards. The acquisition of skill behaviors was instrumental in facilitating the performance of the goal behavior.

Figure 9 presents the baseline, modification and post-modification data.

TARGET CONDITIONS MODIFICATION EXAMPLES:

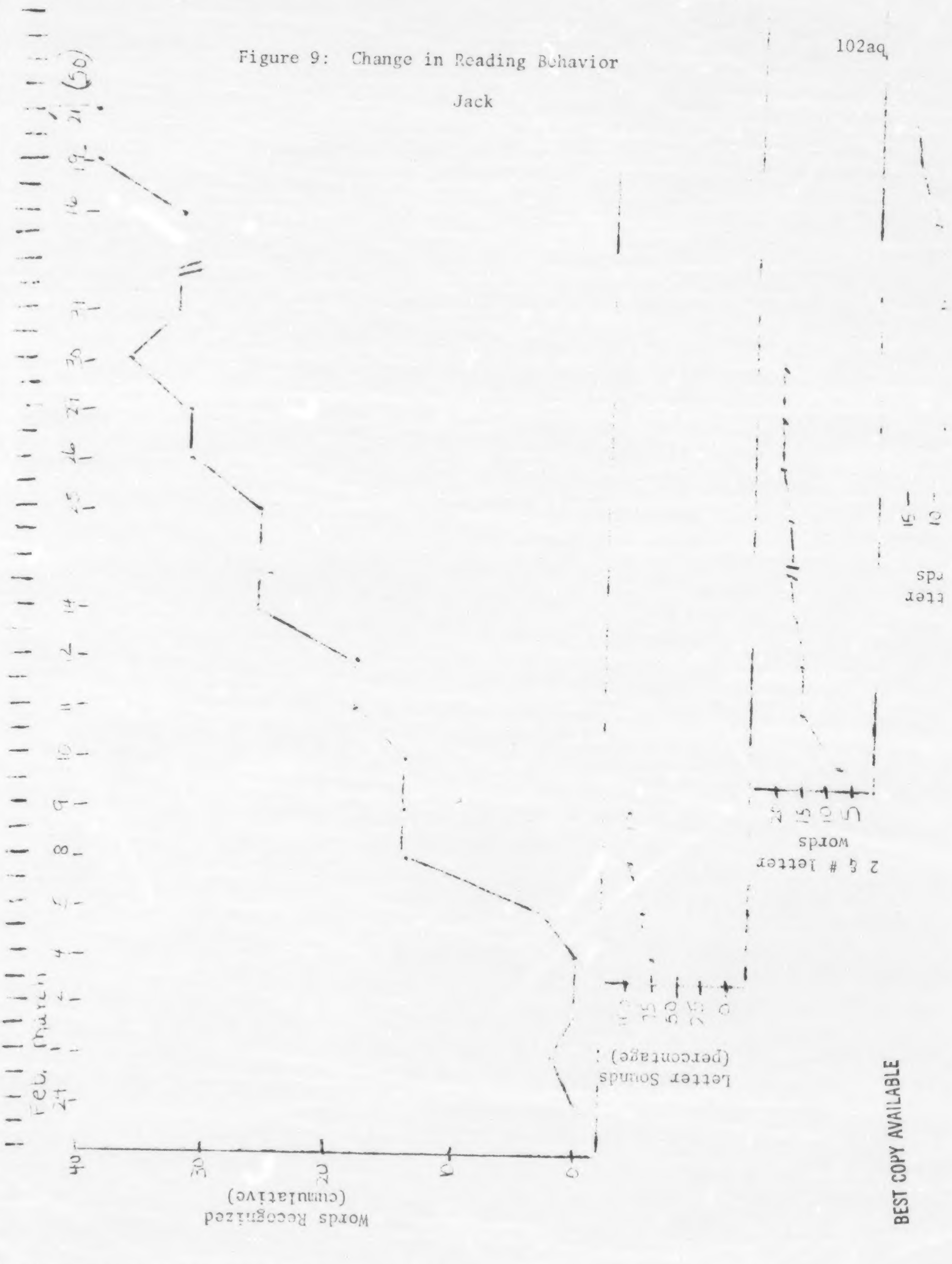
Bill, age 7, was referred to the psychologist by his teacher because of disruptive behavior. The teacher reported that Bill leaves the room and committees frequently during the day and often tears up materials in the classroom.

During the problem identification interview the teacher selected leaving the room and leaving committees as the behaviors to be modified. Baseline data were collected by recording the number of times during the morning and during the afternoon (interval recording) Bill leaves the room and the number of times Bill leaves a committee after he has entered it (frequency). Baseline data was collected for five days, with a morning and afternoon sample each day.

Baseline data indicated that Bill left the room only three times during the five day period and all the incidents occurred during the first

Figure 9: Change in Reading Behavior

Jack



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afternoon of baseline. Bill left committees 17 times during the five days of baseline. At this time the teacher decided to alter the goal behavior desired; the new goal behavior became staying in the committee for its entirety (twenty minutes) for at least three of the four committee periods each day.

During the problem analysis interview the teacher indicated a possible maintaining reinforcer might be Bill's activities following his leaving the center, namely playing with the blocks.

A modification plan was devised whereby the teacher and/or aide would praise Bill each time he remained in a comittee for its entirety. Bill was allowed to play with the blocks or use the typewriter in the classroom if he stayed in all four committees for the entire time. These procedures are categorized as adding a positive reinforcer, rewarding Bill's response of staying in the committees. If Bill left the committee he was instructed to play with something on the rug but he was not allowed to play with the blocks or use the typewriter, activities which Bill especially enjoyed. This procedure is classified as removing a positive reinforcer for a competing response (when Bill made the "competing response", he was not permitted to play with the blocks or use the typewriter). Bill was also ignored by the teacher and aide when he left the center. Bill was informed of the plan prior to implementation.

The modification plan was implemented for five days and the teacher continued to record the number of times Bill left the committees during the mornings and afternoons. After the modification period the teacher and psychologist reviewed the data. During intervention Bill left the committees only once and this occurred the first morning the plan was implemented. Since Bill achieved the goal behavior, the case was terminated at this time.

Figure 10 presents the baseline and intervention data.

John, age 6, was referred to the psychologist because of destructive behavior, namely destroying or attempting to destroy other children's property and classroom property. His teacher reported that John destroyed another child's toy animal, broke beads that were in a kit, chewed the red covers from the listening center and hit another child.

During the problem identification interview (PII) the teacher selected destruction of property (both property of other children and classroom property) as the behavior she would like to modify. The teacher then collected baseline data on the number of times this behavior occurred (frequency) throughout the school day (continuous recording), both in the classroom and on the playground during recess.

Baseline data was collected for a total of 17 days. This was longer than for most cases because during this time the psychologist attended a training conference and when she returned the teacher reported that John was exhibiting the target behavior at a low frequency. Therefore, the baseline was continued to determine whether the problem still existed.

Upon examination of the baseline data it was found that John exhibited the target behavior 12 times in 7 days, and 5 times during the last 3 days of baseline. The teacher reported that there apperared to be no clear antecedent conditions: she usually did not hear of John's destructive behavior until after it occurred. A possible maintaining consequence was attention, even though it was negative and delayed. John especially

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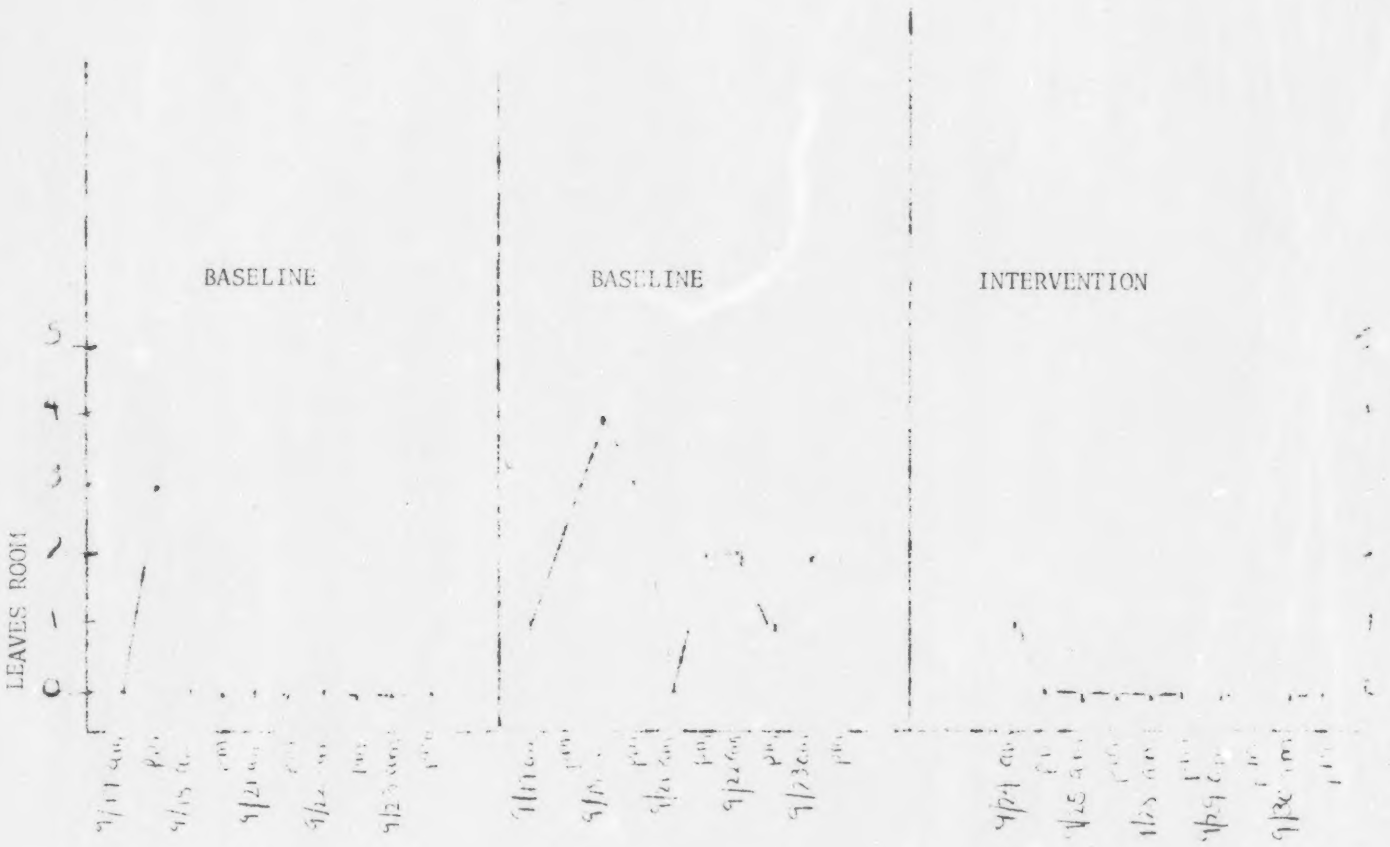
Figure 10: Reduction of Disruptive Behavior

Bill



enjoyed feeding the gerbil or playing with the trucks in the classroom after school and the teacher listed these activities as potential positive reinforcers for John.

The **goal** behavior as defined by John's teacher. was one or less destructive actions per week.

A modification plan was devised whereby the teacher told John each morning that she expected him to make it through the day without any target behaviors occurring. She also told John that if he was successful he would be allowed to participate in an activity he really liked after school. The activities were feeding the gerbil or playing with the trucks. This procedure is called a DRO, differential reinforcement of other behavior or reinforcing the absence of the response. A positive reinforcer is delivered (feeding the gerbil or playing with the trucks) for any response occurring at the end of a time period (the school day) provided the target behavior (destroying other children's property or classroom property) has not occurred since the last reinforcement period.

John was told about the plan and it was then implemented for thirteen days. During this time John exhibited the target behavior only three times. Post-modification data were collected for five days and no incidents of the target behavior occurred. During the post-modification period the teacher discontinued reminding John of their reinforcement plan.

At the conclusion of the case the teacher expressed her satisfaction with John's progress. Figure 11 presents the baseline, modification and post-modification data.

Michael, age 9, was referred to the psychologist by his teacher because of aggressive behavior. His teacher reported that Michael fought, hit,

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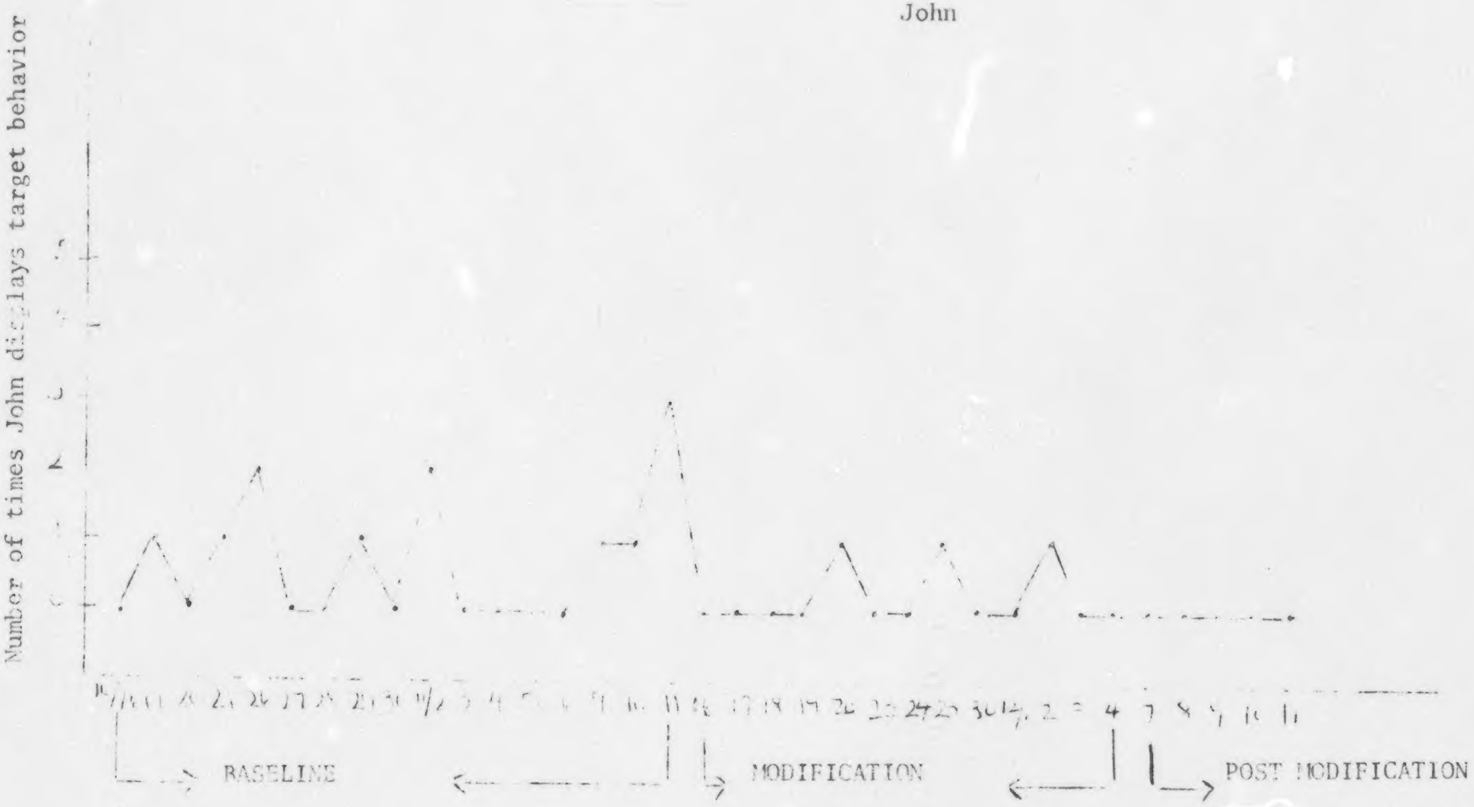
Figure 11: Change in Destructive Behavior

John



(17 days baseline
13 days modification
5 days post-modification

pushed, bullied, and threatened other children. She stated that Michael usually fought with smaller children and intimidated them if they threatened to tell the teacher about it. It was noted in the referral form that Michael had been exhibiting this behavior in school in previous years.

In the problem identification interview the teacher decided that the behaviors she wished to modify were hitting, pushing, fighting, kicking, and other similar aggressive behaviors. The teacher collected four days of baseline data and recorded it by tallying the number of times these behaviors occurred (frequency) during each school day (continuous recording).

Upon examination of the baseline data the teacher and psychologist found that Michael exhibited aggressive behaviors (i.e. hitting, pushing, fighting and kicking) six times during the four days of baseline. During this time all the incidents occurred on the playground, either at recess, P.E. or lunch. After each incident Michael was sent to see the principal who spoke with him and threatened him with punishment if these acts persisted. However, Michael's behavior did not improve. It was hypothesized that a possible maintaining reinforcer might be the minimal punishment he received for his inappropriate behaviors. It was also hypothesized that recess was a strong positive reinforcer for Michael.

The teacher decided that the desired goal behavior for Michael would be not hitting, pushing, fighting, or kicking other children. A modification plan was devised which used a contingency management procedure and a change in the antecedent environment. Michael was shown the graph of his aggressive behaviors and a discussion was held with him concerning the elimination of his inappropriate behaviors. It was decided that Michael

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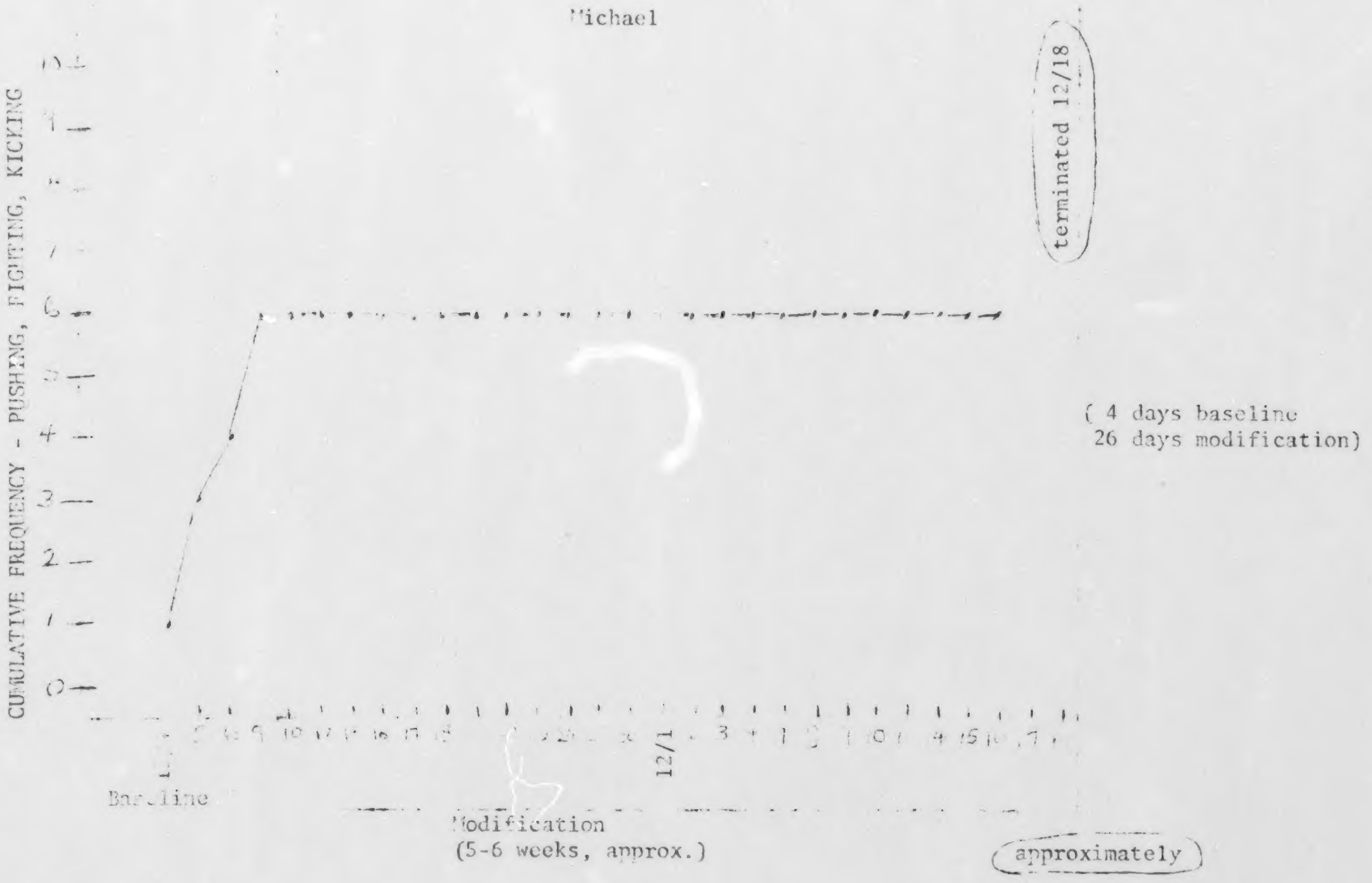
Figure 12: Elimination of Aggressive Behavior



would earn his P.E. periods by not fighting and would lose them by fighting. If Michael lost his P.E. privileges for the day, he would stay in the classroom or be made to sit away from the play area during the P.E. period. When Michael's behavior was good (i.e. no fighting) he would be allowed to participate in his P.E. periods and the teacher would verbally praise him on a continuous schedule. Example: "I am glad you're getting along so well, Mike." The teacher continued to record data on the effects of the modification plan and Michael was encouraged to inspect the graph daily.

The modification plan was implemented for 26 days and the data indicated there were no incidents of aggressive behavior during this time. At the end of this interval the teacher reported that she felt the goal had been reached and the plan was formally terminated. Figure 12 presents baseline and modification data.

Behavioral Objectives: Total Classroom

The following example illustrates the application of the behavioral objectives approach with a large group of students. A kindergarten teacher indicated an objective for her class in the area of reading as recognition of other children's names. The objective was behaviorally specified on the reporting form as "upon visual presentation of a sample of other children's names from the class, and a verbal cues, 'whose name starts with a__?" the children will say the names of the other children presented with 75% accuracy. (Ultimately the children will know 15 of a total of 23 possible names).

The teacher decided within the following week to alter her goal to include both first and last names. Therefore changing the total to 46 names.

The teaching procedure used was to visually present a card containing a written name to an individual child and ask "Whose name begins with a__?" Four to eight cards were presented one at a time throughout the day. The data was collected by the teacher and the teacher's aide one to two times each week and reported as percentage of correct answers.

The data was collected in a rotating sample. Each child was not tested each time data was collected, but three different children were sampled each time until the entire class had been tested. For example, looking at the graph on the following page, children with initials SV, RM, and VE were tested the first day, children VC, AC, and TC the second day, and so on. The three scores for one day were averaged to arrive at the class score. The three students serve as a sample for the entire class, and all students were tested once before the first three were tested the second time. When the sample indicates goal attainment the class was considered to have reached the goal. Each child was monitored on his testing day so that each individual has indicated learning, as well as the class. Figure 13 refers to the evaluation data for the above example.

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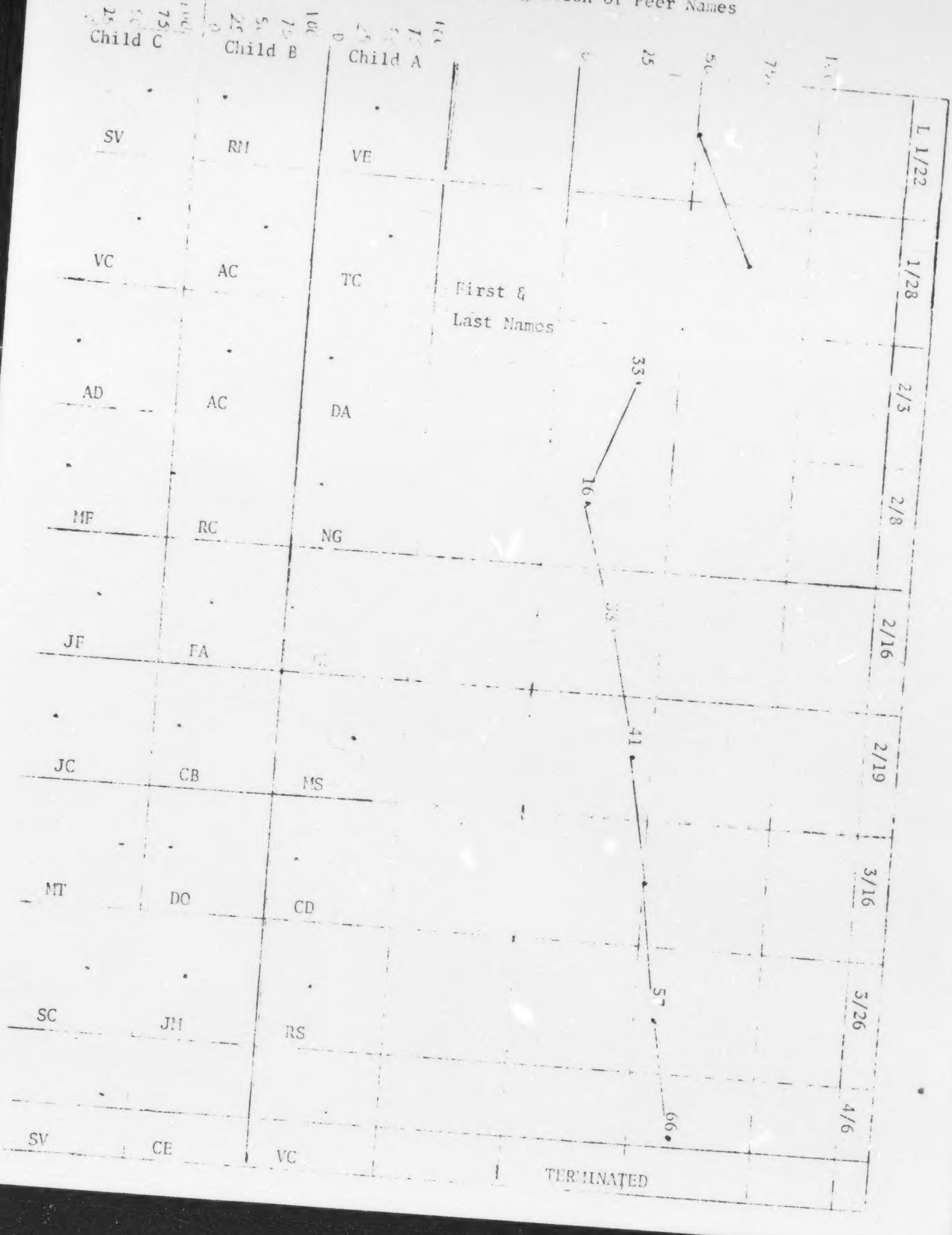
Figure 13: Class Recognition of Peer Names



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PLANS FOR THE COMING YEAR

IMPLEMENTATION OF THE CONSULTATION PROCESS

As mentioned earlier, one of the central objectives of the TEEPS program for the coming year is to increase the articulation of psychological principles to instructional procedures representative of the TEEM instructional model. A training session is planned to train psychologists in the field in new procedures for such articulation. In addition, a team from Psychological Services and the Instructional Component of the Tucson Model will be working on examples of the articulation of psychological principles to teaching procedures of the TEEM instructional approach. These examples will be communicated to psychologists in the field via the computer management information system and training programs to be carried out during the year.

PRESENT STATUS AND PROPOSED DEVELOPMENT OF THE COMPUTER-BASED INFORMATION SYSTEM

Any system, be it an information system or any other man-made system, will have its limitations. A good designer should be aware of these criticisms, and should either begin to develop ways to correct them, or know exactly why he chooses not to. This section attempts to point out the limitations of the TEEPS information system and why they exist. The next section will discuss plans for the correction of these of these shortcomings and the future expansion and use of the system.

One of the limitations to the general success of the system is also the pride of the organization - the lack of a management hierarchy. Each contributor to the system is responsible to himself, in a management sense.

Of course, the psychologists are primarily responsible to the children, and the entire TEEPS program shares in this responsibility. No system - no matter how "well-defined and specified" - should be allowed to interfere with the goals of the child. But, the psychologists sometimes lose track of the importance of sending case reports completed and on time to Tucson, to be incorportated into the data bank. If there were a management hierarchy, there would be someone requiring the reports. In this organization of "all contributors to a common goal", it is easy for each user of the information system to want its service without having to make his own contribution. This limitation is being lessened by the design of report forms which are very simple and quick to complete.

Another limitation is the lack of developed and workable taxonomies of behaviors, intellectual acitivities, and teaching procedures. This would greatly facilitate coding and retrieval.

A basic limitation of the system is the poor incorporation of behavioral objectives cases. These are cases in which the change agent is not so concerned with an existing problem, but rather has a specific goal he wants to meet and establishes a method for achieving the goal, collecting data along the way. Behavioral objectives are reported in this system, but really need additional classifications to be represented completely. Another file could readily be provided for the data bank containing behavioral objectives goals. It would be retrievable by content area, response category, etc. The reporting forms for these cases need to be improved in the area of teaching procedure description.

Some technical limitations exist in the system, but generally for lack of funds. Many technological additions would greatly facilitate the working of the system, but the cost is prohibitive. Among these are optically-scanned forms on which the psychologists directly report cases, a key-word retrieval system rather than numerically coding cases, a disk pak on which to sort the files for random access, the use of on-line terminals in each community to report the data.

One last criticism of the system is the extent of manual handling of the data. The data is recorded by the psychologists, coded on (or transferred to) optical scanner sheets, assigned identification numbers, examined for missing data, all by Tucson staff. The more of these processes that could be computerized, the more reliable the information.

The following section will discuss the future plans for alleviating some of these limitations, and for expanding the system.

At the present time, several developments are being made in the information system. One of these is an improved classification for teaching procedures and modification plans. This classification will enable all the various elements of a plan to be coded for reporting and retrieval - more completely than with the present system. Before such a classification can be implemented, forms will have to be designed to assure the acquisition of all necessary information, and the users of the forms will have to undergo extensive training to be familiar with the terminology used. This classification will certainly facilitate the assumption of the research approach in the information system. Data would be provided for the study of methods employed in teaching the academic and social skills, for the study of required activities for achieving certain behavioral objectives, etc. This addition to the system will also facilitate reporting and retrieving behavioral objectives cases.

Another area now under consideration is the design of forms and coding systems to better handle behavioral objectives. The emphasis on behavioral objectives has only been realized in TEEM and TEEPS this past school year and much development in the area is yet to be done.

Several developments during the coming year will eliminate much of the manual, error-prone, time-consuming process now being used. These include transfering data from the case forms directly onto tape via paper tape and on-line terminal, assigning identification numbers by computer, and examining cases for missing data by computer.

Plans are being made to include in the system programs that perform data trend analyses. These analyses are of the type "do teachers tend to apply the TEEPS model on their own after once seeing its success, or do they continue to seek psychologists' assistance?", "do communities tend to use the same procedures or vary the content of the procedures?", etc.

Also, simple retrieval of information from teletype terminal is being developed, to enable any user to access information without going through a programmer.

The TEEPS information system is being considered and reworked to be applicable in many situations outside the TEEM and TEEPS models . It should be quite useful, with minor changes, in any psychological services, or in any component of a school system-- in a classroom, in one school, or in an entire system. Management level needs such as PPBS, PERT, etc. could easily be incorporated into the system, and with modifications in the classifications and forms involved, the Information System (IS) could service any data-oriented educational system. These plans are quite realistic, because the emphasis in education today is "behavioral objectives" and "accountability". Already one school in Tucson is being used as a demonstration model for the incorporation of the principles developed by the Tucson TEEPS staff, and the IS will be developed for use in this model.

Included in this development are plans for evaluation of change agents and consultants (psychologists). This includes procedures, classifications of behaviors, forms for data collection, and coding systems geared toward evaluation. The IS will incorporate these new developments and will provide the evaluation information required.

The information system described above is a flexible, adaptive basis upon which to build numerous systems for varied purposes. This is a system complete as it now stands, yet with great potential for "bigger and better" service to a variety of users.

DIFFUSION OF THE TEEPS COMPONENT

Although Psychological Services is an integral part of all Follow Through Programs the Tucson component represents a unique effort within Follow Through to demonstrate the effectiveness of an innovative approach to psychological services. One of the concerns of the staff is that of articulating the diffusion of the program to state level diffusion efforts which are in the planning stage. During the coming year dialogue will be initiated with the Office of Education to explore possible vehicles for diffusing the Tucson Program in order that the efforts and achievements of the last three years will have maximum effect on education in the nation.

CONCLUSIONS

PROGRAM ACCOMPLISHMENTS

TEEPS implementation demonstrates that a systems approach can be used with success to make psychological theory and techniques available for use in solving educational problems. TEEPS, operating within a systems context, has provided professional skills in research, consultation and evaluation to participating schools. This diversity of skills would be difficult to duplicate through the traditional approach of embodying competencies in the individual practitioner.

TEEPS has also demonstrated the effectiveness and efficiency of a consultation approach to the solution of educational problems. Psychological services in schools have traditionally used the so-called medical model, diagnosis followed by treatment. Treatment, when implemented, has been carried out by a highly trained specialist in counseling or psychotherapy.

The medical model has proved to be inadequate for use in schools on serveral counts:

1) The model is limited in its application to "problem" children because it begins with the assumption that there is something wrong with the child. The scope of services which psychologists could provide in schools has been severely curtailed in part because of this limitation of the medical model.

2) Because of cost, diagnosis often takes place without treatment. The schools are provided with a depressing record of problems in children with no record of solutions.

3) Because treatment occurs outside the classroom or home, with no guidance from the teacher or parent, it may lack relevance with respect to solving the problems with which educational change agents are concerned.

4) Finally, applications of the medical model have not required any objective measure of the extent of problem solution. Problems are not defined operationally nor are goals stated in operational terms. Consequently, when the medical model is used it is impossible to determine whether or not services have been of any value.

It has been known for some time that principles of learning can be used to solve educational problems (for example, see Bandura, 1969) and that the elaborate procedures associated with the medical model are in all likelihood ineffective. However, little work has been done on procedures for making psychological principles available to educational change agents who have minimal training in psychology.

TEEPS demonstrates that a psychologist and a teacher working together can solve educational problems. They can define problems behaviorally. They can formulate concrete intervention plans, and they can measure what they have accomplished. The data indicate that consultation teams are highly effective and reasonably efficient, and that consultation as a service can attain a high degree of acceptance in schools.

PSYCHOLOGY IN THE SCHOOLS

We live in an era representing a significant advance toward the long held goal of developing a science of educational practice. Educators and the public at large are no longer satisfied with testimonials about program effects. There is a growing desire to know in concrete terms what an educational program is and what can be expected of the children who are in it.

Psychologists, as behavioral scientists, are in an excellent position to guide the application of science in educational settings, and, indeed, they have already made extensive contributions in this regard. Unfortunately, the psychologist in the schools has not been perceived in the broad role of educational scientist. Rather, he has been identified with specialized, narrowly focused theoretical positions. School psychologists, for example, have been thought of as diagnosticians or mental testers and have dealt mainly with deviant behaviors.

TEEPS is based on the position that the communication process between psychologists and educational change agents is the crucial factor in transmitting psychology into the schools. It is for this reason that great stress is placed on the consultation process within the TEEPS program. Consultation has the capability to bring the vast scope of information which constitutes psychology as a science to bear on educational problems.

THE NEED FOR TRAINING

The character of psychological services in the schools cannot be altered by words. At the Thayer Conference (Cutts, 1955), for example, the importance of consultant services was stressed. Yet, consultation has never become a major thrust in psychological services. The Thayer Conference was not designed to make provision for defining consultation concretely, for demonstrating its effectiveness, or for training psychologists to use it. These are the tasks which are necessary to accomplish to make consultation a part of educational practice.

If the consultant role is to be implemented in the schools, psychologists will have to be trained to perform it. Funding agencies have allocated very little support for the training of psychological services personnel. Perhaps this lack of support stems from disenchantment with the results of services rendered in accordance with the medical model.

We believe that the psychological services worker trained in consultation at the sub-doctoral level is the crucial link in the transmission of psychology as a science into educational practice. The [illegible] operation provides a step toward demonstrating the vital importance of the sub-doctoral psychologist in his role as consultant in the schools.

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